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ANNUAL REPORT

—OF THE—

State Board of Health

—OF—

MARYLAND

—FOR THE—

YEAR ENDING DECEMBER 31, 1909

BALTIMORE:
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State Board of Health of Maryland, 1909

Dr. WILLIAM H. WELSH, President	Baltimore.
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Dr. JAMES BOSLEY, Health Commissioner of Baltimore city (ex-officio).	
Hon. ISAAC LOBE STRAUS, Attorney-General of Maryland (ex-officio).	
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Dr. MARSHALL LANGTON PRICE, Secretary	Baltimore.

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Dr. WM. R. STOKES, Bacteriologist	Baltimore.
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M. L. RULLMAN, Chief Clerk	Baltimore.
M. MICHEL, Clerk and Stenographer	Baltimore.
J. H. TOMLINSON, Jr., Assistant Clerk	Baltimore.
J. M. CONWAY, Assistant Clerk	Baltimore.

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PREFACE

Baltimore, *January* 10, 1912.

To His Excellency
PHILLIPS LEE GOLDSBOROUGH,
Governor of Maryland.
Annapolis, Md.

Sir:—

In accordance with the laws of Maryland, the Secretary transmits herewith the Report of the State Board of Health for the year 1909.

The importance of the conservation of human life is fully recognized by this Board, and we believe that if properly equipped and supplied with sufficient financial support from the State, that very far reaching results in the betterment of the people of Maryland can be accomplished.

I am fully in accord with the recommendations of the Secretary, that the local health officers throughout the State should be selected, as far as possible, on the basis of efficiency and special training and experience in sanitary science, and also that they should receive adequate remuneration for the important and responsible duties which they must perform.

The greatest immediate need of the Department is for an additional appropriation sufficient to enable us to equip and maintain a Bureau of Sanitary Engineering, which we were given the authority to establish by the General Assembly of 1910.

We also need, as pointed out by the Secretary, extensive amendments to the laws for the registration of births and deaths.

I would also point out the importance of the work which we are doing in the control of tuberculosis and the necessity for an increased appropriation to enable us to continue the provisions of the State laws in operation.

Most respectfully yours,

Wm. H. Welsh,
President.

LETTER OF TRANSMITTAL

BALTIMORE, *January* 10, 1912.

TO HIS EXCELLENCY
PHILLIPS LEE GOLDSBOROUGH,
GOVERNOR OF MARYLAND.

SIR: In accordance with the provisions of Sections 5 and 6, of Article 43, of the Code of Public General Laws of Maryland, I transmit herewith the Report of the State Board of Health for the year 1909.

In accordance with the provisions of Section 6, of Article 43, I have incorporated in the body of the report the vital statistics of the State for the year.

It is hardly necessary to point out to your Excellency, that the most important function of any government, is the protection and conservation of the lives and health of its people. It is generally recognized by the modern students and teachers of political economy, that the conservation of human life stands first in importance in the general movement towards the conservation of natural resources.

While other departments of the State government are directly or indirectly charged with the protection of life and health, the major share of the responsibility rests with this Department.

A properly equipped department of health, organized along modern lines can accomplish very far-reaching results to the health, lives and prosperity of the people over whom it has jurisdiction.

The greatest defect in public health administration of today, is the lack of organized effort towards the reduction of infant mortality. This applies not only to Maryland, but to all other States.

This State, very properly, expends large sums of money to encourage immigration, but it has as yet made little effective effort to raise to the productive stage the children born within its boundaries. It has been found by practical experience, that of all the problems of sanitary administration, the reduction of infant mortality is the simplest and most satisfactory. The means employed are partly educational and partly statutory, and wherever either or both have been effectively applied, it has been possible to cut the infant mortality in half.

In all those States where properly organized and efficient departments of health have been instituted it has been possible to make material gains in lowering the death rate. This applies especially to the age period between fifteen and fifty years.

During the year 1909, there were 20,138 deaths registered in Maryland, of which 10,376 occurred in Baltimore City and 9,762 in the remainder of the State. The death rate for the State at large was 15.07 per thousand, as compared with 15.37 for the year 1908. In Baltimore City the death rate was 17.68, as compared with18.07 for 1908. The death rate in the rural portion of the State was 13.01.

The average age of death for 1909 was 37.11, as compared with 37.90 years in 1908. On account of the large colored population and especially on account of the heavy mortality among colored infants, the average age of death in Maryland ranges considerably lower than that of the New England States, though the death rate compares very favorably with that of New England, notwithstanding our large colored population. The death rate among our white population is only 13.78 per thousand.

Returning again to the general death rate, your Excellency will note by table XV, on pages 32 and 33, that we have here classified the diseases according to their sanitary aspects and you will observe from the table and chart that nearly one-half of these deaths are classified as "Parasitic Diseases," that is, they are germ diseases caused by the transferrence of the bacteria of disease from the sick to the well. It is generally conceded by sanitarians that all of the parasitic diseases are preventable and it is toward the prevention of this class of diseases that the work of this department is largely directed. The parasites of disease include such organism as the typhoid bacillus, the diphtheria bacillus, the micrococcus of pneumonia, the spirrillum of Asiatic cholera, the bacillus of tuberculosis, and the two organisms causing what are known as the social diseases.

It is also well known that these and other pathogenic organisms not only cause directly a great many deaths, but are the leading factors in many other deaths returned from other causes, and this is particularly true of the diseases spoken of as "Degenerations."

POPULATION OF MARYLAND.

According to our estimates the population of Maryland for 1909 was 1,336,402, of which 1,077,247 were white and 265,055 were colored. The estimated population for Baltimore City was 586,865 and for the remaining portion of the State 947,537. The estimated population gives a slight excess of females over males.

LOCAL BOARDS OF HEALTH.

During 1909, there were twenty-three county health officers in Maryland, and also health officers in eighteen incorporated towns. All local health officers are secretaries of local boards of health, with the exception of the Commissioner of Health of Baltimore City. Both the county and town health officers are, as a class, very greatly underpaid, their salaries ranging from $150 up to $1,000. The highest paid local health officer is the Health Officer of Baltimore County, who receives a salary of $1,000 per annum and is also allowed an office and a clerk. The pay is, of course, wholly insufficient to enable these officers to live, and they are practically all dependent upon their private practice.

The efficiency of sanitary administration must evidently be greatly dependent upon the character of the work done by local boards of health, and it is perfectly evident that these local boards cannot operate without sufficient health officers, and it is manifestly impossible to secure efficient service for the miserable pay given by the average county or town. Some of these officers, however, have given very valuable service to the State, even under the most adverse conditions. The low scale of compensation is probably the most serious obstacle to efficiency in local administration, but another obstacle of almost equal importance is frequent rotation in office on account of political changes. Under existing conditions in this State, the local health officers take up the duties of their office wholly untrained, and those who are most capable become sufficiently familiar with their work about the end of their two years term to be of real value to their communities, and it frequently happens that just about the time when a local health officer has reached the stage when he has become a good public servant, capable of making a record in public health work, some political change throws him out of office and all of the value of his training and experience is lost to the public.

There is, however, I am glad to note, a growing tendency to reappoint efficient and capable men, irrespective of personal or political considerations, and I believe there is a strong sentiment, not only among the medical profession who should be the leaders in a movement of this kind, but among the general public, to remove the office of county or town health officers from the influence of political consideration, so far as it is now possible to do so.

Irrespective of other considerations, I believe it very desirable to increase the term of health officers to a period of six years or longer and provide a salary commensurate with the importance of the work.

Under the provisions of Section 28, of Article 43, of the Code of Public General Laws of Maryland, county health officers are required to report to the Secretary of the State Board of Health annually, upon the sanitary conditions of their counties and upon the administration of their office. These reports will be found on pages 122-141 inclusive. It will be noted that thirteen of these twenty-three county health officers did not furnish reports as required by law.

While not mandatory under our statutes and not as a rule required by the various town charters, city and town health officers have been requested to furnish reports, and these have been published on pages 142-147, inclusive. Reports were furnished by the health officers of seven towns and eleven town health officers furnished no reports.

Considerable difficulty was experienced with St. Mary's County during 1909 in compelling the County Commissioners to execute the mandatory provisions of Section 34J, of Chapter 413, of the Acts of the General Assembly of 1904, requiring the disinfection of premises vacated by the death or removal of tuberculous occupants and it became necessary to threaten mandamous proceedings against the county in order to compel it to comply with the law. A similar difficulty in Allegany County was promptly adjusted by the County Commissioners.

INFECTIOUS DISEASES.

SMALLPOX.

Owing to the fact that the citizens of this State are generally well vaccinated, and especially to the efficiency of the execution of the law requiring that school children shall be vaccinated before the admission to the public schools, there has not been for many years any difficulty in the control of smallpox in the State, although cases entering from other States occasionally give rise to small localized epedemics among the unvaccinated.

About the middle of March smallpox broke out at the Maryland House of Correction. The first case was taken sick March 18th, and was examined by me March 24th. He had never been successfully vaccinated. At the time he was taken sick he was working in the broom shop with about sixty or seventy other men. Out of four or five of this man's close associates who were examined for signs of successful vaccination, only one was found to have been successfully vaccinated and it appears to have been the general custom of the jail not to vaccinate the inmates upon admission. The following day, March 25th, I issued a quarantine order closing the shops and holding the officers and contractors under observation. On March 26th, four vaccine physicians vaccinated four hundred of the inmates, and on March 28th the remaining three or four hundred. The broom shops and the broom store houses were fumigated by Dr. C. W. G. Rohrer. The patient was removed at once to the pest house. On April 5th, Dr. J. J. Murphy discovered and removed to the pest house another case of smallpox, a colored man who had been working in the broom factory. On April 6th, I visited the House of Correction and removed a third case of smallpox from one of the cells. This patient was a fireman in the engine room and was overlooked during the general vaccination. He had never been successfully vaccinated. His attack of smallpox was severe. Dr. Murphy was appointed special inspector and vaccine physician at the House of Correction on April 7th, and on April 11th four cases of varioloid were removed to a building next to the pest house. An additional case of varioloid was later removed, making altogether four cases of smallpox and five cases of varioloid. The epidemic seems to have been cut promptly short by general vaccination, and the cases which originated after March 28th were undoubtedly incubating at the time they were vaccinated, and in five of the nine cases vaccination seems to have been successful in modifying the course of the disease. It was necessary to issue quarantine orders detaining some prisoners for three weeks after their term had expired. The precautions were effective in preventing any secondary cases of smallpox arising from the prisoners discharged.

Typhoid Fever.

The deaths from typhoid fever during the year numbered 440. As the mortality from this disease does not exceed 10 per cent., it would mean that there were over four thousand well developed cases of typhoid fever in this State during the year, nearly all of whom were sick for three weeks or longer and were probably incapable of work for three additional weeks and many of whom were left with minds or bodies permanently impaired. The average cost of the sickness of these individuals to their families, not counting the fatal cases in which there were funeral expenses in addition to the expenses of sickness, probably averaged from $150 to $500, and taking the lowest figure, the cost of the disease divided among these families amounted to about $660,000.00, or divided among the whole population of this State, a per capita tax of 44 cents on every man, woman and child in Maryland.

The City of Cumberland paid its usual heavy tax from typhoid fever, the disease in this instance being due to polluted water drawn from the Potomac River for the public supply of Cumberland.

As happens nearly every year, a number of epidemics of lesser magnitude were traced to infected milk supplies. In tracing the majority of these epidemics it was usually found, first, that there was a case of typhoid fever among those handling the milk; second, that there was lack of care in handling the milk, amounting in some cases to absolute uncleanliness. In this State polluted milk ranks second to polluted water in producing typhoid fever and the effective regulations of milk supplies in this State requires drastic legislation as well as a liberal appropriation.

An epidemic of some size which broke out in Baltimore City and the neighboring part of the county during September, was traced to a dairy in Baltimore County, in which there was a polluted well which had been infected by a typhoid patient in the next house.

Tuberculosis.

Tuberculosis still continues to be one of the heaviest burdens which this State has to bear, both as regards life and as regards the actual cost in money. Owing to the fact that tuberculosis in a wage-earner very frequently brings about the dependency of the whole family, and owing to the long duration of the disease, the financial tax upon the community from this disease is heavier than from any other.

During the year 1909, there were 2,362 deaths from tuberculosis. There are estimated to be about 10,000 cases of this disease in the State at the present time.

Under the provisions of chapters 399 and 412 of the Acts of the General Assembly of 1904, all cases of tuberculosis are registered in this office. The law also provides for the issue of supplies to be used by the patient in order that those living with him will not become infected with tuberculosis. The physician is charged with the measures of precaution necessary for the protection of the members of the family, all of which he reports upon a blank provided for the purpose. The State pays them a fee of $1.50 for carrying out the methods authorized by this department. In event of the failure of the physician to act, the duties then fall upon the local boards of health. These laws are among the most important executed by this Department, and since their passage by the General Assembly of Maryland of 1904, they have been incorporated in the statutes of eleven other States. The original appropriation of $5,000.00 per annum has never been increased and unless we have some relief from the next Legislature the work will have to be stopped to avoid a deficit. The packages of supplies issued by this Department for cases of tuberculosis are supposed to be sufficient to last for three months. During 1909, 4,305 such packages were issued from this office. I believe it will be necessary for us to receive an annual appropriation of $10,000 in order to enable us to carry on this work.

OTHER INFECTIOUS DISEASES.

In addition to the figures for typhoid fever and tuberculosis which have already been given, the following cases and deaths from other infectious diseases were registered in this office:—Measles, cases reported 2471, deaths 79; whooping cough, cases reported 355, deaths 118; scarlet fever, cases reported 588, deaths 21; diphtheria, cases reported 614, deaths 89; influenza, deaths 179; smallpox, cases reported 16, deaths none. There was one death from pellagra reported during 1909. It is to be hoped that this latter disease will not become established in Maryland, as its method of transmission is not known and it is accordingly very difficult of control by the health authorities of the State.

VITAL STATISTICS.

Maryland was admitted into the area of registration States in 1905. The U. S. Census Bureau requires that at least 90 per cent. of the deaths must be registered before any State can be admitted into the registration area. Registration of deaths in this State is fairly complete and is constantly improving, but there are two or three counties in this State which are constantly neglecting to effectively execute the provisions of the law for the registration of births and deaths. Among the worst of these counties are Garrett and St. Mary's.

During 1909, the State Board of Health, acting under the provisions of Chapter 124, Acts of the General Assembly of 1906, decided to supersede the local registration office for Garrett County. Thirty days' notice in writing was given as provided in this Act.

The registration of births in this State is now and always has been very defective. It is not likely that more than 60 per cent. of the births which actually occur within this State are registered.

The problem of vital statistics is of fundamental importance. The proper registration of births and deaths is not only the foundation of an efficient public health work, but is, to a great extent, the foundation of good government. No good government can be conducted without a thorough knowledge on the part of the administrative powers of the population which is to be governed. The conduct of a department of health in particular, without a proper registration of births and deaths, can no more reach efficiency than the operation of a large business enterprise without a proper system of bookkeeping. The greatest reason for proper birth registration lies in the fact that we cannot obtain proper knowledge of infant mortality or devise means for its control without full and correct registration of births.

A number of our State laws, and I may state in particular the child labor law, depend upon the registration of births for their execution. Inasmuch as the proper registration of births is the only method of definitely determining the age of any individual, a large number of civil rights and immunities are dependent upon birth registration.

The existing registration laws are defective and should be amended so as to establish registration upon a firm basis.

During 1909, warrants were taken out for six undertakers charged with making disposition of dead bodies without a burial permit, as required by law. In three cases a fine of $10.00 and costs was imposed, in one case sentence was suspended upon the payment of costs, in one case there was a finding of "not guilty" and in the sixth case we have no record.

FOOD AND DRINK.

During 1909, the Board continued its routine work in the analyses of water supplies and milk, and the inspection of animals killed for food in the various abattoirs surrounding Baltimore. The total condemnation of animals during 1909 numbered 300, 33 hogs, 178 cattle, 89 sheep. 11,320 pounds of spoiled beef, hams, bacon and corn beef, were condemned by the inspector, also 200 pounds of spoiled beef aboard the steamship Ran by my assistant, Dr. Rohrer.

In May, 1909, the Board passed rules and regulations governing the use of night soil for fertilizing vegetables. The largest part of this material was removed from cess-pools in Baltimore City and distributed to farmers in the neighboring counties. The examination of vegetables fertilized with this material showed the frequent presence of the colon bacillus and occasionally the ova of the *taenia solium* or ordinary tape worm, and the practice of fertilizing, as then conducted, was regarded as a menace to the public health. The enforcement of these rules and regulations seemed to have removed most, if not all the dangers, resulting from the practice.

During February, there were seven cases of trichinosis in Baltimore which were traced to a pork roll which was packed in Philadelphia. This pork had been government inspected and stamped, but it is imposible to determine the existence of trichinae in the meat without microscopic examination and this is not practical with the large number of animals which each inspector must examine.

During February, Dr. Stokes and myself accompanied the Virginia Department of Health in the sanitary survey of the oyster beds along the Maryland-Virginia boundary. It was found that, except in the neighborhood of the larger cities where there were sewers in close proximity, that the oyster beds were practically wholly free from pollution. I would impress upon your Excellency the necessity for a survey of this kind in Maryland, not only as a measure for the health of the people, but as a means of protection to our oyster industry. The State of Maryland is in a very advantageous position as far as the oyster industry is concerned, as a great majority of the oyster beds are far distant from any of the ordinary sources of pollution, and it would be a simple matter to close the few polluted beds and make the Maryland oyster stand first as far as their safety and wholesomeness is concerned. Unless this is done I am very much afraid that some serious epidemic of typhoid fever will be traced to our oysters and as a consequence, that the industry will be done an irretrievable damage. As a matter of fact it is now believed in Washington that an outbreak of typhoid fever occurring during the past winter was due to Maryland oysters.

SANITARY SURVEYS.

During the year, a number of sanitary surveys were made in various Maryland towns and results of a great deal of value accomplished. A complete sanitary survey takes several days and contemplates the complete investigation of the town or city, the population, birth and death rates, housing conditions, paving and drainage, food supply, disposal of garbage, and other wastes, offensive and unhygienic trades, milk supply, water supply and methods of sewerage disposal. Many of these surveys have accomplished a great deal of good and they have usually been given wide publicity in the local newspapers. We are broadening this work as rapidly as possible with the limited force and money available, but in order to accomplish permanent and effective results, it is necessary for us to have sufficient funds to properly establish a Bureau of Sanitary Engineering.

Sanitary surveys were made of the State Military Rifle Range on May 25th, of the Takoma Park water shed on May 21st, a general sanitary survey of La Plata, Charles County, on October 5th, the investigation of an outbreak of typhoid fever at that place, the milk supply of Hagerstown on October 11th. The water furnished by the Baltimore County Water and Electric Company was also under investigation during October. A special investigation was made of the Baltimore City water supply on September 9th. The Herring Run water shed, supplying Highlandtown and Canton, in reference to which about one hundred and twenty restraining orders were issued by this Board, was reinspected by Dr. Rohrer in October and all but sixteen of the pollutions found to be abated. These also have since been abated.

POLLUTION OF STREAMS.

A number of problems involving the pollution of streams not used for drinking purposes came before the Board during 1909. The situation became especially acute in the cases of two streams flowing through Baltimore, namely, Jones' Falls and Gwynn's Falls, where rapid suburban development resulted in throwing a volume of sewerage into these streams which they were unable to handle under the most favorable conditions.

On June 2nd, the Board established by regulation standards for sewage effluents discharged into the streams not used for drinking or domestic purposes and these standards have been put into effect in the drainage areas of the two streams above mentioned.

Effective sewerage disposal plants were established during the year at Govanstown, Dupont Park and Brehm's Distillery.

INSTITUTIONS INSPECTED.

Under the provisions of Section 5, of Article 43, of the Code of Public General Laws of Maryland, the Secretary is directed to make sanitary inspections of public institutions "From time to time and whenever directed by the Governor or Legislature to do so." Inspections were made of the Charlotte Hall School, Baltimore Manual Training School, Baltimore County Alms House, St. Vincent's Orphan Asylum. A special investigation was also made of the resorts in the neighborhood of Baltimore.

EXTRA OFFICIAL RELATIONS.

Under an act of Congress, the Surgeon General of the U. S. Public Health and Marine Hospital Service, is directed to call a conference of the various State and Territorial health officers once annually and as much oftener as may be demanded by a majority of the sanitary representatives of the various States and Territories.

This body is purely advisory and has no administrative functions, but the conferences have been of practical good in establishing uniform methods of procedure in quarantine and other matters, and in one instance at least the conference was instrumental in compelling the government to take adequate steps for the control of the epidemic of bubonic plague in San Francisco.

The annual conference for 1909 was held in Washington on June 2nd and 3rd.

An unofficial body, the Conference of State and Provincial Boards of Health of North America, also met in Washington on June 3rd and 4th. This Board was represented by a delegate at each of these meetings. Delegates were also sent to the annual meeting of the American Medical Association on June 7th.

In November, I addressed the annual conference of health officers of the State of New York at Rochester by invitation.

BACTERIOLOGICAL LABORATORY.

During the year 1909, 3,036 examinations were made for physicians for the detection of the various communicable diseases. These examinations were distributed as follows: blood for typhoid fever 1,265, blood for malaria 246, sputum for tuberculosis 1,147, throat cultures for diphtheria 378. In addition to these there were 630 examinations for drinking water and 75 examinations for milk.

During the year, Dr. Stokes succeeded in isolating the typhoid bacillus from the water supply of a school in Southern Maryland. The cases of isolation of the typhoid bacillus from drinking water are extremely few in the history of bacteriology, but with the improved technique which Dr. Stokes is employing, it is hoped that this can be done more frequently.

CHEMICAL LABORATORY.

During the year 1909, the chemical laboratory reported 444 analyses as follows: water 255, milk 81, cough drops 1, candy 1, witch hazel 2, gall stones 1, factory wastes 2, creamery wastes 6, disinfectant 1, table syrup 1, preserves 1, catsups 2, olive oil 2, salad oil 1, canned vegetables 5, medicines 6, sewage 6, paper napkins 8, spices 10, vanilla 1, vinegar 14, butter 19, oleomargarine 18.

DANGEROUS TRADES.

During the year 1909, three girls employed in a canning factory was taken sick with purpura hamorrhagica. Two of these girls died of hemorrhage and anæmia at the Johns Hopkins Hospital. These girls were employed in a room where cans were sealed with a rubber composition. Several of the other girls were found to have pupuric eruptions without being sufficiently sick to disable them. Samples were taken of the rubber composition, also the benzol used to dissolve the rubber, which were treated in our laboratory by fractional distillation. Experiments were made upon rabbits by injection with these fractional distillates, also with benzol taken from one of the carboys and with chemically pure benzol, which was bought from a reliable house and tested as to its purity. It was found that in rabbits identically the same symptoms could be reproduced by the injection of benzol as occurred in these two fatal cases, excepting the eruption and hemorrhages. The most remarkable effect of benzol was found in the white blood cells. In the two fatal human cases the count of the white blood cells fell to between 400 and 800 per cubic centimeter, before death, while the normal count should have been from 6000 to 8000. I know of no other disease in which such a low count has been observed. The red blood count was also reduced to about 1,000,000 per c. c. and the same condition was observed in the experimental rabbits. An attempt was made to also expose rabbits to the fumes of benzol by inhalation, a measured quantity of benzol and of air being passed through an ordinary gas meter into an air chamber in which the rabbits were placed, but it was found that too heavy doses of benzol caused asphyxiation of the rabbits, while smaller quantities did not produce the effects of in jection during the short period during which the investigation was carried on.

The laws of Maryland have been remarkably silent on the regulation of dangerous trades, and I think it necessary that these trades should be dealt with by proper statutory enactments, and I would suggest that your Excellency place this matter in the hands of a suitable committee or commission in order that proper legislation may be drafted.

I would recommend that the execution of these laws be placed in the hands of the local and State health authorities.

Most respectfully submitted,

Marshall Langton Price,

Secretary.

VITAL STATISTICS, 1909.

Statistics is defined by Webster as "The Science which has to do with the collection and classification of certain facts respecting the condition of the people in a State."

The origin of the term from the "State" indicates its real importance in the science of politics. Government may be said to originate as a science with statistics. The science of statistics begins, on the other hand, in the enumeration and study of certain particulars concerning the individuals constituting the population of a State. Such a study is known as a census.

Statistics involves the systematic study of various important forms of classified knowledge, but the most important of these is that branch known as vital statistics.

Vital statistics is the most important of the statistical studies dealing with the resources of the State, as it concerns the State's most valuable asset, namely, its human living capital.

All capital possessed by the State (with the exception of real property) having intrinsic value is directly dependent upon the population.

The proper study of vital statistics comprises three main elements:

1. *The birth rate.*
2. *The death rate.*
3. *The duration of life.*

The efforts of the public health board are consequently directed towards: First, increasing the birth rate; second, diminishing the death rate; third, increasing the duration of life, the latter consideration being most important from the sanitarian's standpoint.

While many statistical investigations may be made from the usual census inquiries, vital statistics form a class specialized in such degree that, in addition to the data obtained by the census, another class of data must be secured, viz., the data obtained by registration.

Registration may be defined from the standpoint of vital statistics, as the written return under statutory requirement by certain designated persons, to lawfully constituted officers, of facts concerning individuals whose relations to the State are of temporary or permanent special interest or importance.

The foundation of vital statistics lies in the registration of births and deaths, though other data registered under statutory requirement, such as divorces, marriages, diseases and physical and mental deficiencies, may also be included under the term.

The United States Census requirements for Registration States, as announced in the Twelfth Census of the United States, Vol. III, Part 1, Pa. XXXVIII, are:

> " * * * only those areas * * * where the deaths obtained from registration sources constituted 90 or more per cent. of the total (registration plus additions from enumerators) ; and the additions from the enumerators' returns did not exceed 20 per cent. of the number reported by them."

The returned mortality in Maryland probably now constitutes over 90 per cent. of the total deaths. The reported births probably fall under 80 per cent. of the actual births. Maryland statistics share, in this respect, the deficiency existing in practically all American States in the registration of births.

The total deaths registered in Maryland during 1909 were for the rural districts, 10,185; in Baltimore City, 9,953; making a total for the State of 20,138.

The total births reported for the same year from the rural districts were 10,839; for Baltimore City, 8,796; making a total for the State of 19,635, leaving an apparent deficiency in the population of the State of 503.

The figures for Maryland during 1908 were: Births, 19,397; deaths, 20,284—a deficit of 887. These figures show a decrease in the deficit of 384, and an increase in the birth registration of 238.

The rates for births, deaths, increase or decrease in 1909, were all calculated from the estimated population for 1909, the actual figures of population being only available for the census years. All estimates are drawn from the last census year, 1900.

In the following method, the population for the inter-census years is calculated by logarithms.

METHOD OF ESTIMATING POPULATION IN THE INTER-CENSUS YEARS.

To secure a more accurate estimate of population in the inter-census years than that recommended by the U. S. Census Bureau, a *geometric* method of increase is used in place of the *arithmetic* method.

In the *arithmetic* method used by the Census Bureau the absolute increase for the ten years intervening between the two last censuses is divided by 10, and this number added to each succeeding year following after the last census.

In the *geometric* method the actual annual rate of increase is calculated for the 10 years intervening between the last two censuses.

If p=population of the census preceding the last and

P=population of the last census, we determine the rate of increase (n) by the following formula:

P=population at last census.
$P(n+1)$ =population one year later.
$P(n+1)^2$ =population two years later.
$P(n+1)^3$ =population three years later, etc.
$P(n+1)^{10}$=rate of increase for the ten years intervening between the last two censuses.

RATE OF INCREASE OF POPULATION OF MARYLAND.

For the 10 years intervening between the last two censuses—1890-1900—the rate of increase was for:

Maryland	13.97%	Population 1900	$P = p \times 1.1397$ (A)
Baltimore	17.15%	" "	$P = p \times 1.1715$ (B)
Rural Districts	11.70%	" "	$P = p \times 1.1170$ (C)

To determine the annual increment (n) and population of inter-census year. (Logarithmic method.)

Rural Districts.

$(n+1)^{10} =$ 1.1170 (C).
log. $(n+1)^{10} =$ log. $1.1170 = 0.04805$
10) 10.04805–10
10.04305–1
log. $(n+1) = 0.004805$
$(n+1) = 1.0112$
Log. of Pop. 1909 = $(n+1)^9$
$= 0.004805$
9
log. $(n+1)^9 = 0.043247$
$(n+1)^9 = 1.104707$
Pop. 1909 = P. 1.104707

Baltimore

$(n+1)^{10} = 1.1715 = (B)$

log. $(n+1)^{10} = \text{log. } 1.1715 = 0.068742$

$10)\ 10.068742-10$

$1.006874-1$

log. $(n+1) = 0.006874$

$(n+1) = 1.0160$

Log. of Pop. 1909 $= (n+1)^9$

$= 0.006874$

9

log. $(n+1)^9 = 0.061867$

$(n+1)^9 = 1.15310$

Pop. 1909 $=$ P. 1.15310

Maryland.

$(n+1)^{10} = 1.1397\ (A)$

log. $(n+1)^{10} = \text{log. } 1.1397 = 0.056790$

$10)\ 10.056790-10$

$1.005679-1$

log. $(n+1) = 0.005679$

$(n+1) = 1.0132$

Log of Pop. 1909 $= (n+1)^9$

0.005679

9

log. $(n+1)^9 = 0.051111$

$(n+1)^9 = 1.124890$

Pop. 1909 $=$ P. 1.124890

ESTIMATED POPULATION OF MARYLAND, 1909.

The population of Maryland, estimated according to the method described (*vide supra*), is given in Table I for the male, female, white and colored population of Baltimore City, rural Maryland and the State of Maryland. The logarithms are included for the convenience of statisticians and others who wish to employ Maryland figures.

The estimated population, white and colored, for the counties appears in Table II. The estimated population by ages, without distinction of sex or color, appears in Table XII.

TABLE I.

ESTIMATED POPULATION IN MARYLAND FOR 1909.

Maryland.	Population.	Logarithm.
Total population	1,336,402	6.125942
White	1,071,247	6.029930
Colored	265,055	5.423336
Male	662,873	5.821430
Female	673,529	5.828357
Baltimore City.		
Total population.......	586,865	5.768547
White	494.879	5.694499
Colored	91,986	4.963722
Rural Districts.		
Total population.......	947,537	5.874793
White	577,952	5.761892
Colored	171,585	5.234479

	White.		Colored.	
Maryland.	Population.	Logarithm.	Population.	Logarithm.
Male	532,207	5.726081	130.666	5.115965
Female	539,140	5.731701	134,389	5.128253
Baltimore City.				
Male	239,501	5.379402	41,025	4.613049
Female	255,378	5.407184	50,961	4.707238
Rural Districts.				
Male	292.706	5.466432	89,641	4.952507
Female	284,772	5.454497	83,428	4.921312

Logarithms $(n+1)^9$	
Maryland	.051111
Baltimore City	.061867
Rural Districts.........	.043247

BIRTHS IN MARYLAND.

The total number of births recorded in the State of Maryland during 1909 was 19,635, of which 10,839 were reported from the rural districts and 8,796 from Baltimore City.

The total number of white births reported was 16,090. The total number of colored births reported was 3,545.

The total number of male births was 10,175; of female births, 9,460.

In Table II the births, deaths and increase are given by counties for the whole population, white and colored races; also the birth rate, death rate and rate of increase per 1,000 of the population (estimated as given above from the United States Census figures for 1900). This table also gives the estimated population of the counties (total white and colored) for 1908.

TABLE II.

Estimated Population for the Counties of Maryland, 190.9.

Counties.	White.	Colored.	Total.
Allegany	57,406	1,822	59,288
Anne Arundel	26,775	16,965	43,740
Baltimore	87,409	12,805	100,214
Calvert	5,612	5,664	11,276
Caroline	13,266	4,656	17,922
Carroll	35,039	2,339	37,378
Cecil	23,033	4,183	27,216
Charles	8,852	10,631	19,483
Dorchester	20,410	10,452	30,862
Frederick	50,712	6,619	57,331
Garrett	19,425	101	19,526
Harford	24,718	6,483	31,201
Howard	13,594	4,843	18,437
Kent	12,530	8,195	20,725
Montgomery	22,534	11,077	33,611
Prince George's	19,786	13,214	33,000
Queen Anne's	13,245	7,014	20,257
Somerset	18,102	10,507	28,609
St. Mary's	9,849	9,104	18,953
Talbot	14,227	8,216	22,443
Washington	47,107	2,717	49,824
Wicomico	18,805	6,412	25,217
Worcester	15,456	7,566	23,022
Total for Counties	577,952	171,585	749,537
Baltimore City	494,879	91,986	586,865
Maryland	1,072,831	263,571	1,336,402

TABLE II—*Continued.*

BIRTH RATES, DEATH RATES, AND RATE OF INCREASE, 1909.

	White.			Colored.			Whole Population.		
	Births, Per 1,000.	Deaths, Per 1,000.	Inc. or Dec. Per 1,000.	Births. Per 1,000.	Deaths. Per 1,000.	Inc. or Dec. Per 1,000.	Births. Per 1,000.	Deaths. Per 1,000.	Inc. or Dec. Per 1,000.
Allegany	20.01	10.99	+9.02	29.12	20.32	+7.80	20.25	11.25	+9.00
Anne Arundel	15.84	12.78	+3.06	7.72	21.15	—13.43	12.68	16.02	—3.34
Baltimore	13.79	15.93	—2.14	9.36	17.86	—8.50	13.23	16.19	—2.96
Calvert	22.07	12.47	+9.60	20.83	16.42	+4.41	21.45	14.27	+7.18
Caroline	12.88	13.71	—0.83	7.32	21.26	—13.94	11.43	15.86	—4.43
Carroll	12.04	13.58	—1.54	12.40	17.96	—5.56	12.06	13.83	—1.77
Cecil	13.28	13.31	—0.03	7.89	1.67	+6.22	12.52	13.88	—1.36
Charles	17.09	11.52	+5.57	20.48	16.07	+4.41	19.38	14.03	+5.35
Dorchester	19.20	12.98	+6.22	21.24	18.66	+2.58	19.90	14.94	+4.96
Frederick	11.93	11.23	+0.70	12.23	20.69	—8.46	11.96	12.33	—0.37
Garrett	7.97	6.43	+1.54	10.00	10.00	0.00	7.93	6.45	+1.48
Harford	11.20	11.16	+0.04	6.17	16.35	—10.18	10.16	12.25	—2.09
Howard	16.91	12.43	+4.48	13.01	12.80	+0.21	15.83	12.52	+3.31
Kent	11.17	12.05	—0.88	8.29	17.92	—9.63	10.03	14.92	—4.89
Montgomery	16.50	8.83	+7.67	11.82	11.46	+0.36	15.26	9.69	+5.57
Prince George's	25.72	13.44	+12.28	19.30	16.65	+2.65	23.15	13.81	+9.34
Queen Anne's	11.62	9.73	+1.88	10.84	17.83	—6.99	11.30	12.53	—1.23
Somerset	14.41	9.39	+5.02	8.32	11.60	—3.28	12.19	10.20	+1.99
St. Mary's	3.77	4.45	—0.68	0 43	2.19	—1.76	2.16	3.48	—1.32
Talbot	15.10	9.83	+5.27	8.88	20.43	—11.55	12.83	13.68	—0.85
Washington	20.31	13.21	+7.10	13.97	19.11	—5.14	22.17	13.54	+8.63
Wicomico	17.90	11.69	+6.21	8.11	13.55	—5.44	14.75	12.17	+2.58
Worcester	12.54	8.79	+3.75	16.11	13.87	+2.24	13.72	10.42	+3.30
Baltimore City	14.79	15.74	—0.95	16.12	28.10	—11.98	14.98	17.68	—2.70

TABLE II—*Continued.*

BIRTHS, DEATHS, AND INCREASE OF POPULATION.

	White.			Colored.			Whole Population.		
	Births.	Deaths,	Inc. or Dec.	Births.	Deaths,	Inc. or Dec.	Births.	Deaths.	Inc. or Dec.
Allegany	1,149	631	+518	53	37	+16	1.202	668	+534
Anne Arundel	424	342	+82	131	359	—228	555	701	—146
Baltimore	1,206	1,394	—88	120	229	—109	1,326	1,623	—297
Calvert	124	68	+56	118	93	+25	242	161	+81
Caroline	171	183	—12	34	99	—65	205	282	—77
Carroll	422	476	—54	29	41	—12	451	517	—66
Cecil	308	307	+1	33	71	—38	341	378	—37
Charles	159	102	+57	218	171	+47	377	273	+104
Dorchester	392	265	+127	222	195	+27	614	460	+154
Frederick	605	570	+35	81	137	—56	686	707	—21
Garrett	154	125	+29	1	1	0	155	126	+29
Harford	277	276	+1	40	106	—66	317	382	—65
Howard	229	169	+60	63	62	+1	292	231	+61
Kent	140	151	—11	68	147	—79	208	298	—90
Montgomery	372	199	+173	141	127	+14	513	326	+187
Prince George's	509	266	+243	255	220	+35	764	486	+278
Queen Anne's	154	129	+25	76	125	—49	230	254	—24
Somerset	261	170	+91	88	122	—34	349	292	+57
St. Mary's	37	45	—8	4	20	—16	41	65	—24
Talbot	215	140	+75	73	168	—95	288	308	—20
Washington	957	624	+333	38	52	—14	995	676	+319
Wicomico	318	220	+98	54	87	—33	372	307	+65
Worcester	194	136	+58	122	105	+17	316	241	+75
Baltimore City	7,313	7,791	—478	1,483	2,585	—1,102	8,796	10,376	—1,580

By reference to that part of the table dealing with birth rates, death rates and rate of increase per thousand, on page 8, a comparison may be made of the efficiency of registration in the various counties of Maryland, and for this purpose a number of national and international birth and death rates are introduced. The total English birth rate, legitimate and illegitimate, averaged 32.6 per thousand of population in 1841 to 1850. In 1896 it was 29.7. The lowest birth rate in English counties in 1895 was in Sussex, 24.3. In Part I of Section 3 of the United States Census Report on Vital Statistics for 1901, Volume 3, the birth rate of the United States for ten years was calculated at 31.5; for England and Wales, 30.1; for Germany, 36.2; for France, 22.2, and for Switzerland, 27.7. The birth rates of the United States are generally acknowledged to be higher than most European countries. The national death rate per thousand, as calculated by Dr. Ogle in 1881, was: For England and Wales, 18.88; Austria, 18.82; Switzerland, 19.38; Germany, 19.21; Holland, 20.81; France, 21.31, and Italy, 19.33. The general death rate for the United States during the ten years specified was 17.4. The birth rate given by the United States Census for Maryland in 1890 was 26.0. It can be assumed for Maryland that a birth rate of under 20 indicates insufficient returns, and a birth rate of under 15 markedly defective returns, while a birth rate of below 10 indicates very bad returns. In classifying the counties according to this standard we find four counties in 1909 which return a birth rate of over 20, namely, Allegany, Calvert, Prince George's and Washington. Births from these counties can be classified as good. In the class of defective birth returns are Baltimore, Caroline, Anne Arundel, Cecil, Worcester, Carroll, Charles, Dorchester, Frederick, Howard, Montgomery, Queen Anne's, Somerset, Talbot, Washington, Wicomico, Harford, Kent, and Baltimore City, all of which give birth returns of over 10, but less than 20. Counties giving birth returns below 10 are Garrett and St. Mary's.

The death rates in Maryland counties should not fall below 17, though for the purpose of comparison a minimum of 15 may be adopted. Counties giving good returns on this classification are Allegany, Anne Arundel, Calvert, Charles, Dorchester, Howard, Montgomery, Prince George's Talbot, Washington, Wicomico and Baltimore City.

Those giving defective returns (between 10 and 15) are Caroline,. Carroll, Cecil, Frederick, Harford, Queen Anne's, Somerset and Worcester. Counties giving death returns classified as very bad are Garrett and St. Mary's. Returns from these counties have always been bad, and have given little evidence of improvement in recent years. In St. Mary's birth and death rates both fall below 10. The largest excess of recorded births over deaths is in Prince George's county, 9.34 (defective returns), and in Allegany, 9.00. A large number of the counties show excesses of deaths over births, the highest being Baltimore county, —297. Excess of deaths over births in Baltimore city is—1580. The highest excess of births over deaths in the white population is 12.28, in Prince George's county, and the greatest deficit in the white population is —88, in Baltimore county. The maximum excess of births over deaths among the colored population occurs in Allegany county, +7.80. The greatest colored deficit in births is in Caroline county, —13.94.

Table III gives a summary of the births, birth rates, deaths, death rates and excess of births over deaths per thousand, among males, females, white and colored, for the rural districts, Baltimore and the State of Maryland.

It will be noticed in this table that both the birth and death rates are higher in the colored race. The death rate is proportionately so much higher that the apparent rate of increase is much less in the colored race than in the white.

The deficiencies in births are undoubtedly due to incomplete and defective returns of births, as there is an evident natural increase in both the white and colored populations of Maryland, as shown by the United States census table.

All birth returns may be assumed to be defective in which the total births do not exceed the total deaths, excepting under unusual circumstances.

The best method of computing the natural increase of population in any State, exclusive of the increase due to immigration, is the comparison of that portion of the population born in a State and living in its borders during a census year with the same class of population in the succeeding census year. The variable factor in such a calculation will be interstate migration, but this factor will probably be fairly constant in Maryland.

In the census year 1890 there were 762,641 persons resident in Maryland who were born in the State.

In the census year 1900 there were 956,661 persons resident in Maryland who were born in the State. The increase in the number of native born in Maryland during the years 1890-1900 was therefore 193,976, or an increase for the ten years of a little over 25%, which probably represents fairly closely in Maryland the natural decennial increase, independent of immigration.

TABLE III.

BIRTHS AND DEATHS IN MARYLAND (1909). SUMMARY.

Births.	Male.	Female.	White.	Colored.	Total.
Rural Districts.........	5,661	5,178	8,777	2,062	10,839
Baltimore City..........	4,514	4,282	7,313	1,483	8,796
Maryland	1,0175	9,460	16,090	3,545	19,635
Birth Rate.					
Rural Districts........	7.41	6.90	15.18	11.40	14.45
Baltimore City.........	7.68	7.29	14.79	16.12	15.00
Maryland	7.61	7.07	15.02	13.75	14.69
Deaths.					
Rural Districts.........	5,107	4,655	6,988	2,774	9,762
Baltimore City..........	5,394	4,982	7,791	2,585	10,376
Maryland	10,501	9,637	14,779	5,359	20,138
Death Rate.					
Rural Districts.........	6.81	6.21	12.08	16.12	13.01
Baltimore City.........	9.19	8.47	15.76	23.66	17.68
Maryland	7.85	7.21	13.78	20.22	15.07
Excess of Births over Deaths, per 1,000.					
Rural Districts.........	+0.60	+0.69	+2.38	—0.97	+1.42
Baltimore City..........	—1.51	—1.18	—0.83	—1.74	—2.82
Maryland	—0.24	—0.14	+0.98	—1.41	—0.37

The succeeding tables (Tables IV and V) give births and still-births for the rural districts of Maryland.

From these districts there were registered in 1909 10,839 births, of which 10,102 were living births and 737 still-births, a proportion of 6.80% of all births still-born.

In Table IV the male and female births are given by months, with the corresponding months of conception, dating nine months previously.

The greatest number of living births was recorded in January (993), the corresponding period of conception being the month of April.

During 1908 the maximum number of births occurred during the month of March (955).

The highest figures next in order were for the months of August (969) and March (965), corresponding to the months of conception of November and June.

During 1908 November furnished the minimum number of births. The minimum number of birth during 1909 occurred in May (833).

The greatest number of male births occurred in August and January. The greatest number during 1908 occurred in May and March. The greatest number of female births occurred in January (471). In two months, April and May, the females exceeded the males by 12 and 35, respectively.

Table VI (still-births) shows practically no seasonal variation, the fluctuation being proportionate only to the number of total births.

Births, male, female and total, appear in Chart 1, page 13.

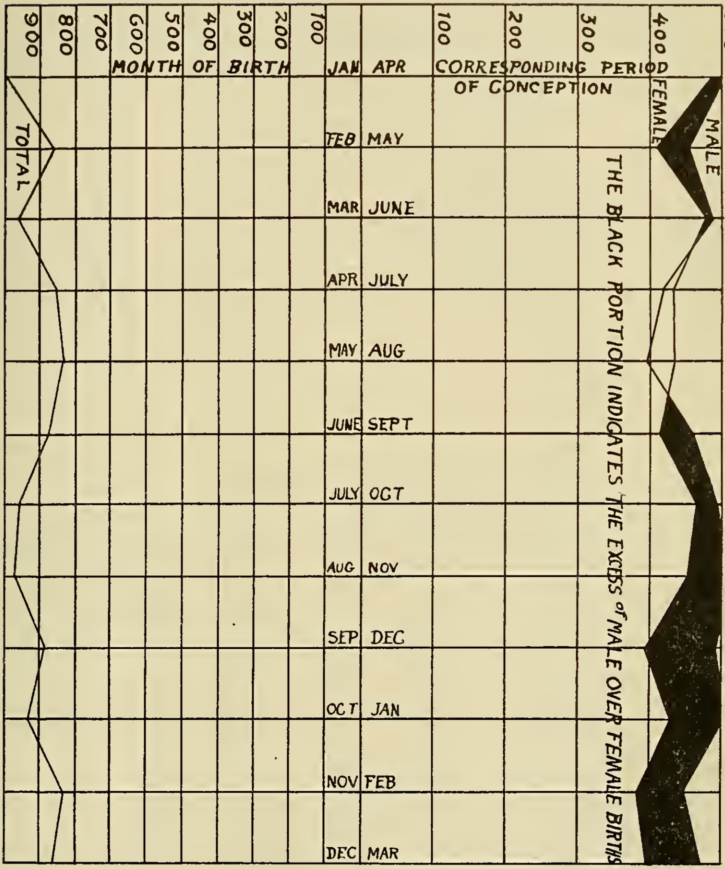

CHART 1—*Births by Months, Male, Female and Total. Rural Maryland,* 1909.

TABLE IV.

BIRTHS, MALE AND FEMALE, BY MONTHS—RURAL DISTRICTS, 1909.

Month of Birth.	Corresponding Period of Conception.	Male.	Female.	Total.
January	April	508	486	993
February	May	459	410	869
March	June	488	477	965
April	July	420	432	852
May	August	399	434	833
June	September	460	416	876
July	October	494	464	958
August	November	516	453	969
September	December	493	396	889
October	January	504	431	935
November	February	451	383	834
December	March	469	397	866
		5,661	5,178	10,839

TABLE V—*Rural Districts.*

Still Births, 1908.	White Males.	White Fem.	Total White.	Col'd Males.	Col'd Fem.	Total Col'd.	Total.
January	17	19	36	13	16	29	65
February	28	15	43	15	15	30	73
March	22	12	34	16	15	31	65
April	16	13	29	17	12	29	58
May	22	15	37	18	13	31	68
June	21	17	38	9	8	17	55
July	28	17	45	12	11	23	68
August	30	16	46	16	13	29	75
September	17	16	33	9	10	19	52
October	16	7	23	11	12	23	46
November	19	15	34	7	10	17	51
December	27	14	41	11	9	20	61
Total	263	176	439	154	144	298	737

Total births, all classes, 10,839.
Still-births, 737.
Percentage of all births—Still-births, 6.80%.

The succeeding table (Table VI) gives illegitimate births by counties. These figures include mainly returns of white births, as, owing to the peculiar marital relations of the colored race, it is difficult to establish a standard of legitimacy for children born of colored parents. Ecclesiastical marriages, as provided by Maryland statute, are not performed in a large proportion of colored persons who are living as man and wife. The highest proportion of illegitimates, according to these figures, was in Talbot county (24.30 per 1,000). St. Mary's county has a slightly higher rate per 1,000, but the figures are so faulty as to be of no value.

TABLE VI.

Illegitimate Births—Rural Districts, 1909.

Counties.	Number.	Total Births.	Illegitimate, Per 1,000.
Allegany	17	1,202	14.36
Anne Arundel	2	555	3.60
Baltimore	5	1,326	3.77
Calvert	4	242	16.53
Caroline	..	205	....
Carroll	5	451	11.08
Cecil	7	341	20.52
Charles	..	377	....
Dorchester	5	614	8.14
Frederick	10	686	14.58
Garrett	2	155	12.90
Harford	6	317	18.92
Howard	4	292	13.69
Kent	..	208	....
Montgomery	9	513	17.54
Prince George's	5	764	6.54
Queen Anne's	3	230	11.08
Somerset	4	349	11.46
St. Mary's	1	41	24.34
Talbot	7	288	24.30
Washington	6	995	6.02
Wicomico	4	372	10.75
Worcester	3	316	9.46
	109	10,839	10.00

The succeeding table (Table VII) gives figures of maximum fecundity in the rural districts during 1909. The table only gives figures of maximum fecundity, as those of mean fecundity are not available, but it may be of interest to consider the figures of European countries, giving the average number of births to a marriage: Italy, 5.15; England, 4.63; France, 3.42.

In the succeeding table only children in excess of the tenth during 1909 are considered. Of these there were 179 white and 72 colored, a total of 251. The percentages of all births being: White, 1.66%; colored, 0.66%; total, 2.32%.

TABLE VII.

TABLE OF MAXIMUM FECUNDITY—NUMBER OF CHILD IN EXCESS OF TENTH BORN IN MARYLAND, 1909—RURAL DISTRICTS.

		11	12	13	14	15	16	17	18	19	20	21	23	Twins.	Total.
Allegany	W	11	6	2	1	2	..	..	..	..	..	..	..	19 W	22
	C	..	1	..	..	..	..	..	..	..	..	..	..	.....	1
Anne Arundel...	W	1	2	3	1	..	..	..	..	..	..	..	..	4 W-IIIW	7
	C	..	..	1	..	..	..	..	..	..	..	..	..	5 C	1
Baltimore	W	12	6	3	4	..	2	1	1	..	..	..	..	10 W	29
	C	1	2	1	..	1	1	..	..	..	..	..	..	4 C	6
Calvert	W	1	..	..	2	..	..	..	..	..	..	..	..	2 W	3
	C	1	3	1	..	..	..	1	..	..	..	..	..	1 C	6
Caroline	W	1	..	1	..	..	..	..	..	..	..	..	..	2 W	2
	C	1	..	..	..	..	..	..	..	.	..	..	..	.....	1
Carroll	W	2	1	1	1	1	..	..	..	..	..	..	..	4 W	6
	C	..	1	1	..	.	..	..	..	1	..	..	..	1 C	2
Cecil	W	4	2	2	2	..	..	..	..	.	..	..	..	2 W	11
	C	..	1	..	..	..	..	..	..	..	..	..	..	.....	1
Charles	W	2	1	1	..	..	..	..	..	..	..	..	..	4 W	4
	C	3	..	..	..	..	..	..	..	..	..	..	..	1 C	3
Dorchester	W	3	1	2	1	..	..	..	..	..	..	..	..	5 W	7
	C	2	1	..	..	1	1	..	..	..	..	..	..	1 C	5
Frederick	W	5	2	1	1	..	..	..	..	..	..	..	..	12 W	9
	C	..	3	..	..	..	..	..	..	..	..	..	..	2 C	3
Garrett	W	2	..	..	..	..	..	..	..	..	..	..	..	1 W	2
	C	1	..	..	..	..	..	..	..	..	..	..	..	....	1
Harford	W	1	1	2	..	2	..	..	1	..	..	..	..	3 W	7
	C	1	1	1	..	..	..	..	..	..	..	..	..	1 C	3
Howard	W	4	3	1	3	..	..	..	..	..	..	..	..	3 W	11
	C	1	1	1	..	..	..	..	..	..	..	..	..	.....	3
Kent	W	2	1	..	1	..	..	..	..	..	..	..	..	1 W	4
	C	1	..	1	..	..	..	..	..	..	..	1	1	.....	4
Montgomery ...	W	2	3	..	1	..	..	..	..	..	..	..	..	5 W	6
	C	2	1	1	1	..	1	..	..	..	..	..	..	3 C	6
Prince George's.	W	8	2	..	3	..	..	..	..	..	..	..	..	3 W-IIIW	13
	C	3	1	1	..	..	..	..	..	..	..	..	..	3 C	5
Queen Anne's...	W	..	3	..	..	..	..	..	..	..	..	..	..	2 W	3
	C	..	..	2	1	1	..	..	..	..	..	..	..	1 C	4
Somerset	W	2	..	1	1	..	..	..	..	..	..	..	..	4 W	4
	C	2	1	..	1	..	..	..	..	..	..	..	..	1 C	4
St. Mary's......	W	..	..	..	..	..	..	..	..	..	..	..	..	1 W	0
	C	..	1	..	..	..	..	..	..	..	..	..	..	.....	1
Talbot	W	..	1	2	1	..	1	..	..	..	..	..	..	.....	5
	C	1	2	1	..	..	..	..	..	..	..	..	..	1 C	4
Washington	W	8	10	1	2	..	1	..	..	..	..	..	..	13 W	22
	C	..	..	..	..	..	1	..	..	..	..	..	..	1 C	1
Wicomico	W	1	1	..	..	..	..	..	..	..	..	..	..	10 W-IIIW	2
	C	2	1	..	..	..	..	..	..	..	..	..	..	2 C	3
Worcester	W	..	..	..	..	..	..	..	..	..	..	..	..	1 W	0
	C	1	2	..	..	1	..	..	..	..	..	..	..	.....	4
White		72	46	23	25	6	3	1	2	1	..	..	..		179
Colored		23	23	12	3	4	4	1	..	..	..	1	1		72
Total..........		95	69	35	28	10	7	2	2	1	..	1	1		251

IIIW—Triplets (white .

An eighteenth and nineteenth child were born to white parents in Baltimore and Cecil counties. In Kent county a twenty-first and twenty-third child were born to colored parents.

In Table VIII the maximum age of fathers and mothers of children born in Maryland during 1909, and discrepancies in ages of parents are shown for the white and colored races by counties. This table considers: A, maximum age of father; B, maximum age of mother; C, minimum age of father; D, minimum age of mother; E, greatest difference in ages (father older); F, greatest difference in ages (mother older).

TABLE VIII.

Table Showing the Maximum and Minimum Ages of Fathers and Mothers of Children Born in Maryland During 1909. Also Discrepancies in the Ages of Parents—White and Colored—Rural Districts.

Allegany County.

Color.	W	W	W	C	W	C	W	W	W	C
Age of Father......	46	22	55	31	46	17	43	51	17	50
Age of Mother......	30	14	39	16	19	18	28	29	17	35
E, 22 years.........			A	D		C		E		
		D	B							

Anne Arundel County.

Color.	W	W	C	W	W	C	W	W	W	W
Age of Father......	37	54	65	52	48	64	27	63	52	20
Age of Mother......	20	39	28	31	26	24	40	41	33	16
E, 40 years........			A			E	F	B		D
F, 13 years.........						A				

Baltimore County.

Color.	W	W	W	W	C	W	W	W	W	W
Age of Father......	49	52	66	50	19	55	51	18	42	34
Age of Mother.....	29	36	37	32	15	40	28	16	26	19
E, 29 years.........			A		D	B		C		
			E							

Calvert County.

Color.	C	W	C	C	W	W	C
Age of Father...............	47	30	40	75	58	47	18
Age of Mother...............	30	40	15	28	40	32	18
E, 47 years..................		B	D	A	B		C
F, 10 years..................		F		E			

Caroline County.

Color.	W	W	W
Age of Father..	53	38	19
Age of Mother..	25	18	17
E, 20 years..		E	C
			D

Carroll County.

Color.	C	W	W	W	W	W	C	W
Age of Father.........	55	64	53	64	18	49	50	26
Age of Mother.........	28	29	30	40	17	23	35	16
E, 35 years............		E		A	C			D
				B				

Cecil County.

Color.	W	C	W	W	W	W	W	W	W
Age of Father...	36	52	47	40	67	61	50	17	62
Age of Mother...	20	24	31	22	40	35	26	18	24
E, 28 years....		E		A				C	
				B					

Charles County.

Color.	C	C	W	W	C	C	W	C	W	C
Age of Father......	56	60	41	50	75	63	34	64	66	24
Age of Mother.....	39	26	25	27	35	40	17	42	41	14
E, 40 years.........					A		D	B	A	D
					E			A		

Dorchester County.

Color.	W	C	W	W	C	W	C	W	C	W	C
Age of Father.	27	19	33	40	?	25	17	74	55	37	45
Age of Mother	37	17	17	22	13	49	16	25	33	60	15
E, 49 years....		D	D		D		C	A		F	
F, 23 years....							D	E		B	D

Frederick County.

Color.	C	W	W	W	W	W	W	W	W
Age of Father...	37	64	70	51	31	23	56	66	52
Age of Mother..	18	25	30	21	16	14	38	38	31
E, 40 years......			A		D	D		A	
			E						

Garrett County.

Color.	W	W
Age of Father..	54	62
Age of Mother..	30	34
E, 28 years..		E
		A

Harford County.

Color.	W	C	W	W	W	W
Age of Father......................	50	?	59	41	53	46
Age of Mother......................	25	13	35	19	26	30
E, 27 years..........................		D		D	E	

Howard County.

Color.	W	W	W	W	W
Age of Father............................	39	42	53	55	46
Age of Mother............................	24	26	24	50	19
E, 29 years................................			E	B	

Kent County.

Color.	C	W	W	C
Age of Father...................................	36	50	18	59
Age of Mother...................................	20	23	17	39
E. 27 years..		E	C	A
			D	

MONTGOMERY COUNTY.

Color.	C	W	C	C	C	W	C	W	W	W
Age of Father......	63	71	39	30	20	37	18	58	60	80
Age of Mother......	37	44	20	15	14	18	17	38	25	27
E, 43 years........	A	A					C			A
		B		D	D		D			E

PRINCE GEORGE'S COUNTY.

Color.	W	W	C	C	C	W	W	C	W	C	W
Age of Father.	70	57	52	43	46	64	74	22	18	24	52
Age of Mother	42	42	37	18	25	34	40	42	17	49	27
E, 34 years....	A					A	A		C	F	
F, 25 years....	B						E		D	B	

QUEEN ANNE'S COUNTY.

Color.	W	W	C	W	W	W
Age of Father....................	55	35	57	47	56	44
Age of Mother....................	35	19	37	30	15	20
E, 41 years......................					E	
					D	

SOMERSET COUNTY.

Color.	W	W	W	W
Age of Father.............................	32	53	60	19
Age of Mother.............................	16	33	32	18
E, 28 years...............................	D		A	C
			E	D

ST. MARY'S COUNTY.

Color.	W	W
Age of Father..	40	60
Age of Mother..	22	38
E, 22 years..		A
		E

TALBOT COUNTY.

Color.	W	C	C	W	W	W	W	W
Age of Father.........	50	55	55	48	49	19	46	61
Age of Mother.........	29	40	32	28	34	17	25	37
E, 24 years...........		B				C		A
						D		E

WASHINGTON COUNTY.

Color.	W	W	W	W	W	W	W	W	W	W
Age of Father......	44	41	50	66	56	18	17	53	42	55
Age of Mother.....	27	25	27	25	18	18	18	30	20	35
E, 41 years.........				A		C	C			
				E		D	D			

WICOMICO COUNTY.

Color.	W	W	C	W
Age of Father............................	47	54	19	54
Age of Mother............................	25	33	17	28
E, 26 years..............................			C	E
			D	

WORCESTER COUNTY.

Color.	W	W	W	W	W	C	C
Age of Father...............	42	52	55	50	55	25	20
Age of Mother...............	21	33	25	35	35	45	16
E, 30 years.................			E			B	D
F, 20 years.................						F	

SUMMARY.

AVERAGE AGES OF PARENTS.

To determine the average age of parents, the number of parents of each sex having reached a given quinquennial period (15-20, 20-25, etc.) at the time of the birth of the child, is multiplied by the median age (17.5, 22.5, etc.).

For mothers of 45 years or over, 50 is the factor employed. For fathers of 50 years or over the factor 55 is used.

Since the number of mothers reaching the age of 50 is small, while the number of fathers reaching an age in excess of 55 is large, the average age of the mother, as it appears in this table, will be somewhat too high. It will be noticed on reference to the preceding table that the maximum age of any mother was 60 years, and only one other mother in the series reached the age of 50 years.

The result of the analysis of these figures appears below.

Average age of father........................	32.51
Average age of mother........................	28.16

According to the figures, the father is 4.35 years older than the mother. If the figures for mothers above the age of 45 were corrected, the average difference would be approximately 4 years.

Maxima minima and difference of parents' ages:

Maximum age of father, 75 years (mother 28, colored).

Maximum age of mother, 60 years (father 37, white).

Minimum age of father, 18 years (mother 16, white).

Minimum age of mother, 14 years (father 24, colored).

Greatest difference in ages, 49 years (mother 25, father 74, white; father older).

Greatest differnce in ages, 25 years (mother 49, father 24, white; mother older).

The succeeding table (Table IX) gives the ages of fathers and mothers of children born in the rural districts of Maryland during 1909, without distinction of color.

TABLE IX.

AGES OF PARENTS OF CHILDREN BORN IN RURAL MARYLAND, 1909.

Age.	Father.		Mother.	
	Number.	Per Cent.	Number.	Per Cent.
10 to 15	.....	.....	8	0.07
15 to 20	106	0.98	1,041	9.60
20 to 25	1,779	16.41	2,796	25.79
25 to 30	2,570	23.80	2,689	24.78
30 to 35	2,121	19.56	1,927	17.77
35 to 40	1,868	16.31	1,397	12.88
40 to 45	1,134	10.44	565	5.21
45 to 50	551	5.08	.....	.....
50 and over	365	3.36	.....	.....
45 and over	.....	.....	66	0.60
Unknown	345	3.18	350	3.23
Total	10,839	.....	10,839	.....

The above table may be used for comparative purposes in determining the age most favorable to fecundity in the male and female sexes, though it must be understood that such a table is only approximate even for comparative purposes, unless the figures for the age of married persons of both sexes are available. From this table it appears that the greatest number of fathers were at the age of 25 to 30 years (23.12%), and the greatest number of mothers at the age of 20 to 25 years (25.29%). The table illustrates, however, very plainly the superior fecundity of the female sex in early life and the persistence of fecundity in the male in advanced life. Thus only 0.98% of the fathers were under the age of 20, against 9.60% of the mothers, or a proportion of about 1 to 10, and of the mothers included in the percentage there were 6 at 14 years of age and 2 at 13 years. At the other extreme, however, we find 8.44% of the fathers above the age of 45, and only 0.66% of the mothers, a proportion of about 1 to 12, and among the group there were 2 fathers of 70 and 2 of 74, while the maximum age of the mothers was 60 years.

A brief reference may be made to the *"tables of nativity"* of Korosi, of Buda Pesth. Stated *mono-sexually,* the maximum fecundity of the female in Buda Pesth is reached between the eighteenth and nineteenth year. In the male the maximum fecundity is reached between the twenty-fifth and twenty-sixth year. In the following table the mean age of fathers and mothers of children born in Maryland during 1909 is stated (Table X, page 26):

TABLE X.

MEAN AGE OF PARENTS OF CHILDREN BORN IN RURAL MARYLAND DURING 1909.

Mean age of ather	32.51
Mean age of mother	28.16
Mean excess of father's age	4.35

TABLE XI.

PERCENTAGE OF NATIVE AND FOREIGN BORN PARENTS OF CHILDREN BORN IN THE COUNTIES OF MARYLAND DURING 1909.

	Parent Nativity.							
	Native.				Foreign.			
	Both Maryland.	One Maryland.	Neither Maryland.	Total Natives.	Both Foreign.	Father Foreign.	Mother Foreign.	Total Foreign.
Allegany	46.67	25.70	17.73	89.69	4.40	3.16	1.83	9.39
Anne Arundel	61.44	9.36	6.60	77.40	15.67	4.50	2.54	22.71
Baltimore	62.44	15.15	7.23	84.82	6.93	4.67	3.46	15.06
Calvert	90.90	6.19	2.47	99.56	0.41	0.00	0.00	0.41
Caroline	62.82	21.96	9.26	94.04	1.46	3.41	0.97	5.84
Carroll	84.25	12.19	1.99	98.43	0.22	0.64	0.64	1.50
Cecil	58.38	31.08	8.21	97.67	1.46	0.29	0.58	2.33
Charles	89.92	7.10	1.83	98.85	0.26	0.79	0.00	1.05
Dorchester	84.55	11.23	1.95	98.73	0.97	0.97	0.00	1.94
Frederick	81.04	12.53	5.68	99.25	0.43	0.00	0.26	0.69
Garrett	54.83	28.38	13.54	96.75	0.00	1.93	1.29	3.22
Harford	69.71	20.81	4.73	95.25	2.20	2.20	0.37	4.77
Howard	77.39	14.38	4.78	96.55	1.71	0.68	1.02	3.41
Kent	89.90	7.69	1.44	99.03	0.48	0.48	0.00	0.96
Montgomery	64.32	18.51	14.61	97.44	1.17	0.58	0.77	2.52
Prince George's	60.20	18.45	17.14	95.79	1.70	0.91	1.57	3.18
Queen Anne's	83.47	10.00	4.34	97.81	0.43	0.86	0.86	2.15
Somerset	87.96	10.60	0.85	99.41	0.28	0.28	0.00	0.56
St. Mary's	87.80	4.87	4.87	97.54	2.43	0.00	0.00	2.43
Talbot	80.20	13.88	3.81	97.89	0.69	1.38	0.00	2.07
Washington	62.11	24.52	11.15	97.78	0.90	0.80	0.50	2.20
Wicomico	75.80	16.93	6.45	99.18	0.00	0.53	0.26	0.79
Worcester	74.36	13.92	8.22	96.50	1.58	1.26	0.63	3.47
Total	69.05	16.90	8.36	94.31	2.78	1.74	1.13	5.65

In the preceding table, No. XI, the nationality of parents of children born in Maryland during 1909 is returned in six columns. In the sub-columns the native and foreign born parents are considered separately. In the column headed "Neither Maryland" the native parents are included, both of whom were born in the United States, but neither native of Maryland. The foreign column is in three subdivisions, in the first of which are included parents both of whom are of foreign birth; and second, father foreign; and third, mother foreign. By reference to this column it will be seen that the largest portion of native parents occurred in Calvert county, 99.56. The greatest portion of foreign parents was in Anne Arundel county, 22.71; Baltimore county being next in order, with 15.06. In five counties the proportion of native-born parents exceeded 99%—Calvert, Frederick, Kent, Somerset, Wicomico. In Calvert county 90.90% of the parents of children born in 1909 were both natives of Maryland. In the rural districts at large there were 94.31% of the parents natives of the United States and 5.65% foreign born. In Allegany county a large proportion of the percentage returned in total foreign were Anglo-Saxon, being natives of Wales, England and Scotland. The highest percentage of both parents foreign was in Anne Arundel county, 15.67, and the highest percentage of mothers foreign is in Baltimore county, 3.46. In Baltimore county 4.67% of the fathers were foreign born. In the counties, excluding Baltimore City, 94.31% of the parents were born in the United States, while 5.65% were foreign born, a showing which may compare favorably with nearly all American States.

DEATHS IN MARYLAND.

The total number of deaths recorded in Maryland during 1909 was 20,138; of these, 9,762 occurred in the rural districts and 10,376 in Baltimore City.

The total number of white deaths was 14,781; of colored deaths, 5,357.

The total number of male deaths was 10,501; of female death, 9,637. There were 6, sex not stated.

Table II gives the births, deaths and increase, and the birth rates, death rates and rate of increase (per 1,000) for the white and colored population of Maryland, estimated, as shown on pages 3 and 4.

Table III gives the births, birth rates, deaths, death rates and excess of births over deaths per 1,000 of population for the male, female, white and colored, and total populations of the rural districts, Baltimore city and the State of Maryland.

It would probably be advantageous to state the male and female death rates separately for the white and colored races, but the conditions shown in these figures would not be materially changed, viz., the superior vitality and longevity of the females of both races.

This table shows, in common with other tables giving death rates for the urban and rural districts, the adverse influence of city life.

Table III indicates another point in connection with city life, viz., that urban conditions fall with especial severity on the colored race.

TABLE XII.

Deaths for the Year 1909, by Ages, Showing Percentages of Total Total Mortality Falling in the Several Periods of Life in the Rural Districts, Baltimore City and the State of Maryland.

Ages.	Rural Districts. Deaths.	Rural Districts. Per Cent.	Baltimore City. Deaths.	Baltimore City. Per Cent.	Maryland. Deaths.	Maryland. Per Cent.
0 to 1 year	2,189	22.41	2,227	21.46	4.416	21.92
1 to 5 years	7.38	7.56	844	8.13	1.582	7.85
5 to 10 years	217	2.22	225	2.16	442	2.19
10 to 15 years	183	1.87	143	1.37	326	1.61
15 to 20 years	305	3.12	247	2.38	552	2.74
20 to 25 years	415	4.25	915	8.81	1.680	8.34
25 to 30 years	350	3.57				
30 to 35 years	346	3.54	933	8.99	1,597	7.93
35 to 40 years	318	3.25				
40 to 45 years	283	2.89	1,067	10.28	1.710	8.49
45 to 50 years	360	3.69				
50 to 55 years	392	4.01	1,108	10.67	1,928	9.57
55 to 60 years	428	4.36				
60 to 65 years	536	5.49	1,192	11.48	2,359	11.71
65 to 70 years	631	6.46				
70 to 75 years	707	7.24	982	9.46	2,232	11.08
75 to 80 years	543	5.56				
80 years and over	759	7.77	4.92	4.73	1,251	6.02
Unknown	62	0.63	1	0.01	63	0.32
Total	9,762		10,376		20,138	

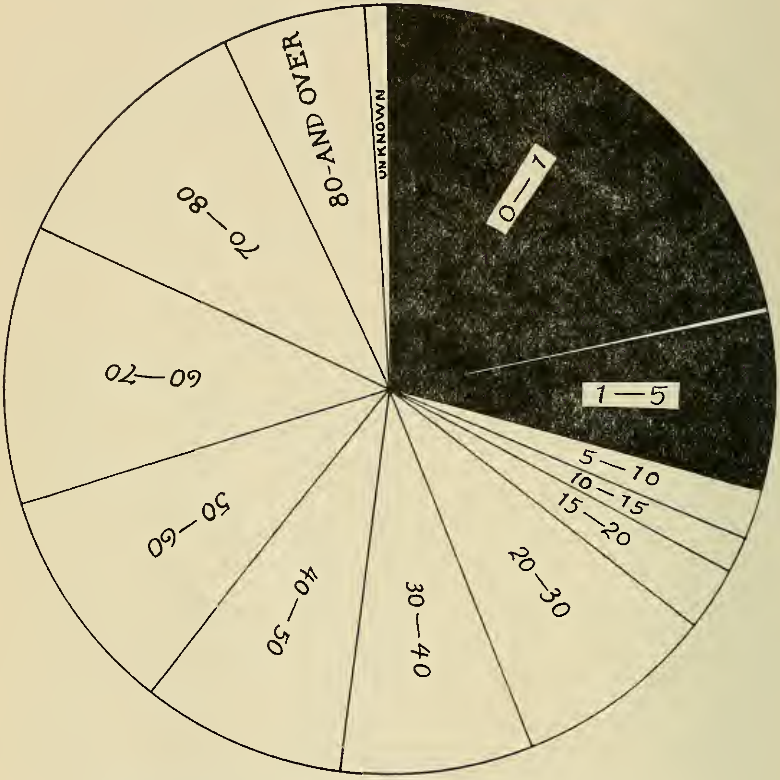

CHART 2—*State of Maryland. Deaths by Ages*, 1909.

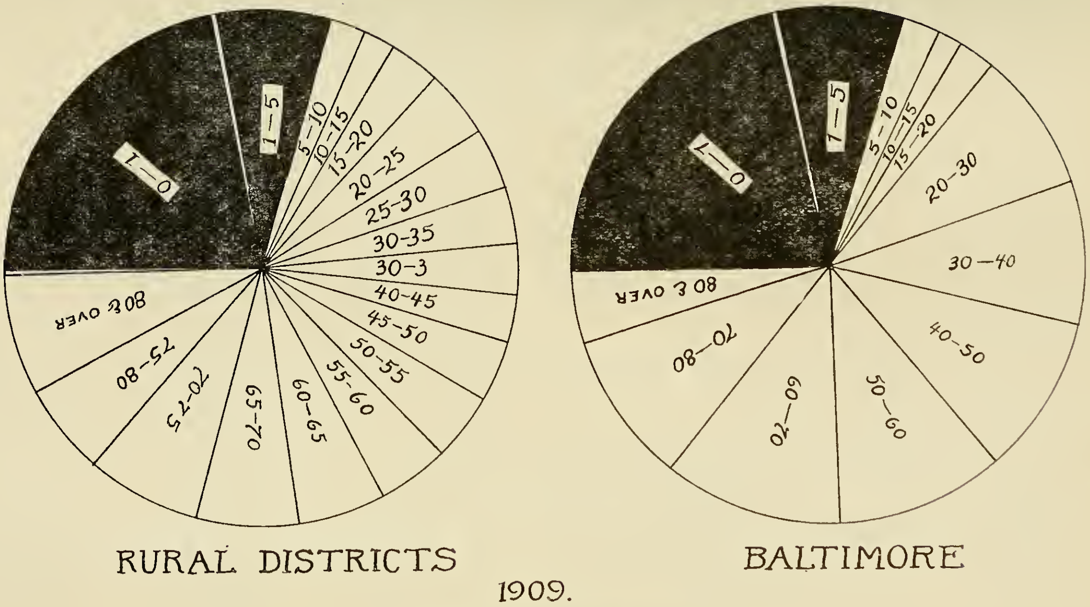

CHART 3—*Deaths by Ages.*

The preceding table (Table No. XII) gives the distribution of the deaths in the rural districts, Baltimore City and Maryland, according to age, giving the number of deaths at each age period and the percentages of total mortality. Chart No. 2 and Chart No. 3 show graphically the percentage of deaths at the several age periods; the charts indicate the excessive percentage of deaths in infancy (under 2 and under 5 years) and the large number of adult deaths at about the age of 70. The observation of the Psalmist in fixing the span of human life at threescore and ten years is, in a sense, correct at the present day, inasmuch as a larger number of adults die at this age than at any other age period. The table shows that the infantile mortality is slightly higher in the rural districts than in Baltimore City, as 21.46% of the deaths in Baltimore City occurred under the age of 2 years, and 22.41% in the rural districts. The figures under the age of 5 for Baltimore City are 29.09%, and the rural districts, 30.97%. This difference is also to be noted in the accompanying charts. The number of deaths over the age of 80 years is considerably higher in the rural districts (7.27%) than in Baltimore City (4.73%). About three-quarters of the infantile mortality occurs in the first two years of life. This table does not show the actual mortality at the various age periods, as to determine this the number of persons living at each age period must be given.

Table XIII gives the estimated population and percentage living at each age period and the deaths and mortality for each age period.

The infant death rate shown in this table for the State of Maryland is 39.68 per 1,000. After 5 years of age the mortality falls to 2.96 per 1,000, at the next quinquennial period. The mortality remains about the same, and rises slowly thereafter until it rises above the infant mortality after the age of 70 years. The mortality after the age of 80 is 203.40 per 1,000.

The lowest death rate is in the period between 10 and 15 years. The death rate per 10,000 at this age period for the past four years (1906, 1907, 1908 and 1909) was, respectively, 28, 23, 23 and 22.8.

TABLE XIII.

POPULATION AND DEATHS PER THOUSAND AT THE SEVERAL AGE PERIODS— MARYLAND, 1909.

Ages.	Per Cent.	Estimated Population.	Deaths.	Mortality per 1,000 of Those Living at the Age.
Under 5 years	11.30	151,127	5,998	39.68
5 to 10 years	11.16	149,186	442	2.96
10 to 15 years	10.66	142,462	326	2.28
15 to 20 years	10.13	135,379	552	4.07
20 to 25 years	9.06	121,079	1,680	7.12
25 to 30 years	8.52	114,664		
30 to 35 years	7.17	95,821	1,597	8.62
35 to 40 years	6.68	89,273		
40 to 45 years	5.80	77,512	1,710	12.15
45 to 50 years	4.73	63,212		
50 to 55 years	4.07	54,392	1,928	20.14
55 to 60 years	3.09	41,294		
60 to 65 years	2.57	34,345	2,357	40.53
65 to 70 years	1.80	24,056		
70 to 75 years	1.23	16,458	2,232	82.60
75 to 80 years	0.79	10,557		
80 to 85 years	0.33	4,409	1,314	203.40
85 to 90 years	0.11	1,469		
90 to 95 years	0.03	400		
95 to 100 years	0.00	120		
100 years and over	0.00	59		

The figures of this table are graphically shown in Chart 4. The profile of the black area, including the portion below, indicates the population; the number of deaths is shown in the black area described below. The population and deaths are shown for quinquennial periods up to the twentieth year; the deaths are shown thereafter in decennial periods.

It will be noted that after the twentieth year the absolute number of deaths remains somewhat the same, but the classes of the population from which they are drawn become progressively smaller, hence the mortality in the several age periods becomes progressively greater, increasing in a high geometric ratio in the later period of life.

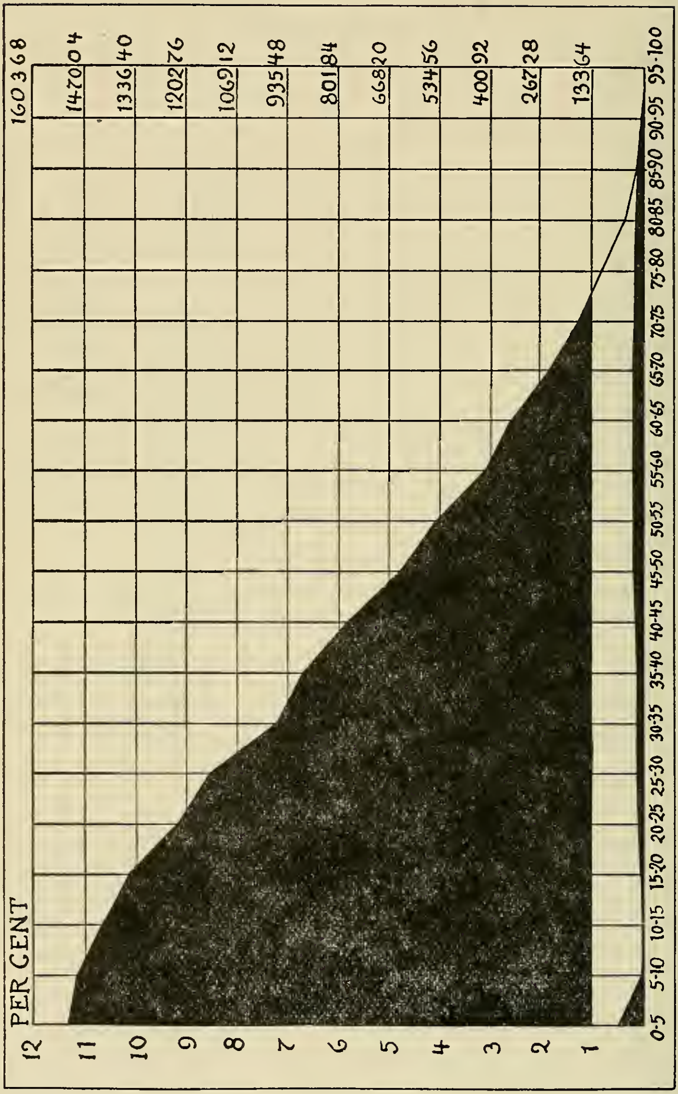

CHART 4—*Distribution of the Population and Deaths by Ages Maryland*, 1909.

The diseases producing the general mortality analyzed in the preceding tables are shown in Tables A and B, at the end of the report, and in the special tables of this section.

It is evident from the sanitary point of view that important differences exist in the nature of these diseases in their relations to the public health, both as regards their infectiousness and possibility of their prevention; accordingly, the diseases have been classified in the table from a strictly sanitary standpoint.

The following main divisions have been recognized—constitutional diseases, congenital diseases and malformations, poisonings and intoxications, malignant neoplasms, degenerations, pregnancy and violence; other obscure and inaccurately classified affections not properly falling in one of the previous classes.

The most important of these classes is that including parasitic diseases, which are mostly communicable, and are to a large extent within the power of sanitary control. All diseases of parasitic origin may be assumed to be communicable to a certain degree, although important differences exist as to the amount and extent of their contagiousness. Accordingly, these diseases are considered in three classes: (*a*) Infectious and contagious diseases: (*b*) communicable diseases; (*c*) other infections of parasitic origin.

The diseases classified under each heading are shown in Table XIV. Parasitic diseases form a class largely under the control of sanitary authorities. Poisonings and intoxications are to some extent controlled by law. Constitutional dyscrasiæ are not, as a rule, subject to administrative control, while congenital diseases and malformations are wholly beyond administrative influence. Deaths from violence are also usually outside the control of sanitary authorities. The diseases classified under degenerations and malignant neoplasms form a class of maladies which are imperfectly understood, and are accordingly not capable of control by our present methods. The comparative importance of these classes as causes of death is graphically shown in Chart 5.

TABLE XIV.

A Classification of Causes of Death, with the Numbers Occurring, and Their Ratios to the Mortality.

(Maryland, 1909.)

Diseases.	Number.	Per Ct.
Parasitic Diseases.		
***Infectious and Sontagious Diseases.**		
Typhoid fever, scarlatina, whooping-cough, diphtheria, influenza, cereebro-spinal meningitis (epidemic), smallpox, measles, glanders, anthrax, actinomycosis............	1,304	6.05
***Communicable Diseases.**		
Malaria, dysentery, tuberculosis, syphilis, tetanus, pneumonia, gonorrhœa, rabies, Addison's disease, erysipelas	4.236	19.81
† Other Infections.		
Septicæmia, pyemia, rheumatism (febrile), meningitis, bronchitis, broncho-pneumonia, gastro-intestinal inflammations (summer diarrhœa of infants, cholera nostras, tonsilitis, pharyngitis, vcholecystitis (and other inflammations of the liver and gall-bladder), pericarditis, cystitis, peritonitis, acute nephritis, gangrene, abscess, furuncle, pleurisy, appendicitis, laryngitis, metritis, endometritis, endocarditis (acute).....	4,399	20.58
Constitutional Diseases.		
Diabetes, exophthalmic goitre, gout, anæmia, chlorosis, leukemia	224	1.05
Congenital Diseases and Malformations.		
Morbus ceruleus, icterus neonatorum, marasmus, sclerema	1,246	5.80
Poisonings and Intoxications.		
Alcoholism, saturnism and occupational intoxication, scorbutus	88	0.41
Malignant Neoplasms.		
Epithelioma, carcinoma, sarcoma......................	818	3.82
‡Degenerations.		
Cerebral congestion and hemorrhage, paralysis (without specified cause), meningo-encephalitis, cerebral softening (?), epilepsy, organic diseases of the heart, angina pectoris, arteriosclerosis, aneurism (and allied degenerations), astha (in all forms), hepatic cirrhosis, Bright's disease, senile debility and dementia, locomotor ataxia, myelitis, insanity, dropsy................	5,490	25.68

TABLE XIV—*Continued.*

Diseases.	Number.	Per Ct.
PREGNANCY.		
Puerperal hemorrhage, puerperal septicæmia, puerperal albuminuria and convulsions, phlegmasia alba dolensa	215	1.01
VIOLENCE.		
Suicide, homicide, murder, dueling, accidental violence, poisoning, gas inhalation, drowning, strangulation and legal execution, death by insolation, lightning, freezing, burns and scalds	1,159	5.37
INACCURATELY CLASSIFIED.		
Encephalitis, hemorrhage, benign tumors, pulmonary congestion and apoplexy, and organic diseases of unspecified nature	959	4.49

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* All communicable diseases have been assumed to be due to a living organism and included in this list, whether specific living cause has been discovered or not.

† The distinction between these three classes is one of kind rather than degree, as all parasitic diseases may at some time be communicable.

‡ Includes mainly the disorders dependent on advanced years and prolonged strain.

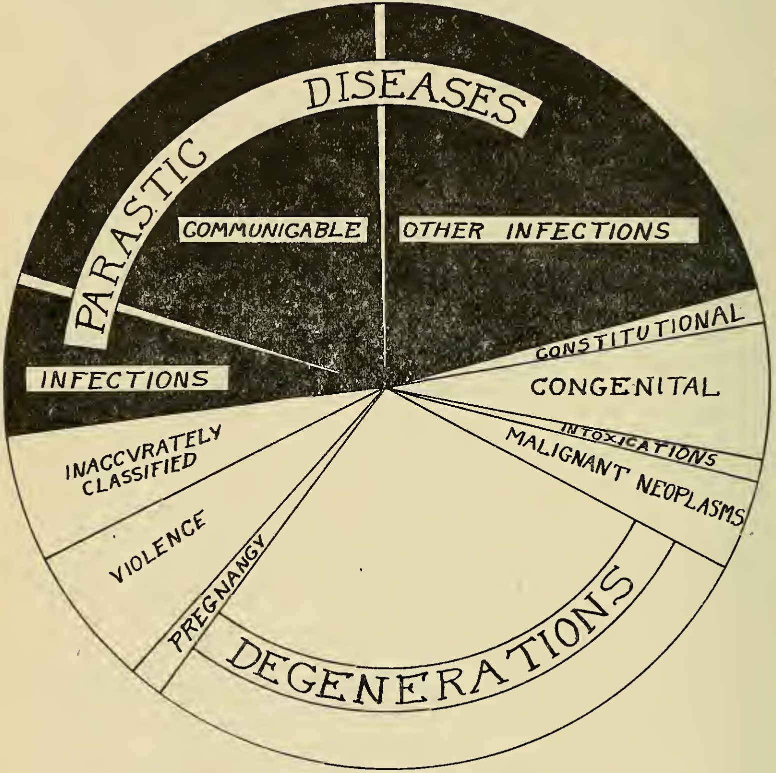


CHART 5—*Maryland Classification of Causes of Death*, 1909.

PRINCIPAL CAUSES OF DEATH.

The prinipal causes of death are separately considered, as together they cause about seventy-five per cent. of the total mortality, and they are, in the main, preventable diseases.

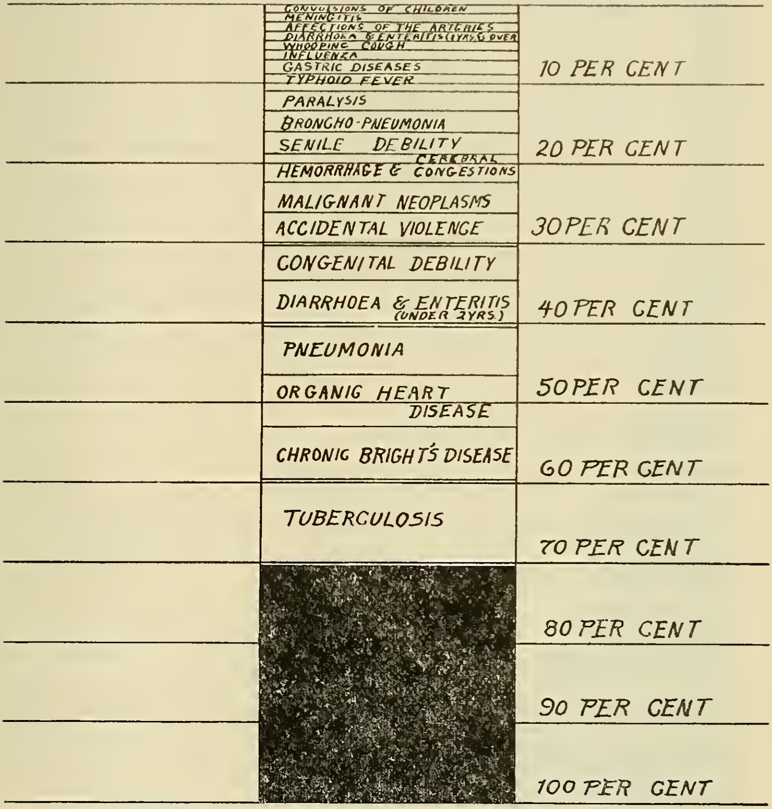
In Table XV the twenty principal causes of death are tabulated, the table giving the number of deaths, the percentage of the total deaths and the mortality per 1,000.

Twenty principal causes are given in this report, and we find that Diphtheria is not in the list, this, of course, meaning another drop in the mortality from this disease. In 1907 it occupied the nineteenth place, and in 1908 the twentieth place. The comparative mortality for these diseases is shown in Table XV, and in Charts 6, 7 and 8. Tuberculosis of the lungs and larynx ranks first, causing 11.05% of the total mortality, or a mortality of 17.68% per 10,000. The mortality during 1908 was 17.42 per 10,000. There has been a decided increase in the mortality per 10,000 for Pneumonia from 8.21% per 10,000 (1908) to 9.61% per 10,000 (1909). In the Maryland figures pneumonia ranks far below consumption as a cause of death, and there are no indications that pneumonia will in the future produce a mortality equal to consumption in Maryland, at any rate during the present decade.

TABLE XV.

Twenty Principal Causes of Death in Maryland, 1909.

	Deaths.	Per Ct. Total Mortality.	Mortality, Per 10,000.
1. Tuberculosis, Pulmonary and Laryngeal	2,362	11.05	17.68
2. Chronic Bright's Disease	1,402	6.56	10.49
3. Organic Heart Disease	1,371	6.41	10.25
4. Pneumonia	1,283	6.00	9.61
5. Diarrhœa and Enteritis (under 2 years)	1,221	5.71	9.21
6. Congenital Debility	1,059	4.95	7.92
7. Accidental Violence	881	4.12	6.60
8. Malignant Neoplasms	818	3.83	6.13
9. Cerebral Congestion and Hemorrhage	761	3.56	5.70
10. Senile Debility	607	2.84	4.54
11. Broncho-Pneumonia	574	2.69	4.29
12. Paralysis	483	2.26	3.62
13. Typhoid Fever	440	2.06	3.28
14. Gastric Diseases	397	1.86	2.90
15. Influenza	265	1.24	1.99
16. Whooping-Cough	240	1.12	1.80
17. Diarrhœa and Enteritis (over 2 years)	219	1.02	1.64
18. Affections of the Arteries	217	1.02	1.62
19. Meningitis	212	.99	1.59
20. Convulsions	206	.96	1.54



TWENTY PRINCIPAL CAUSES OF DEATH 1909

CHART

CHART 6.

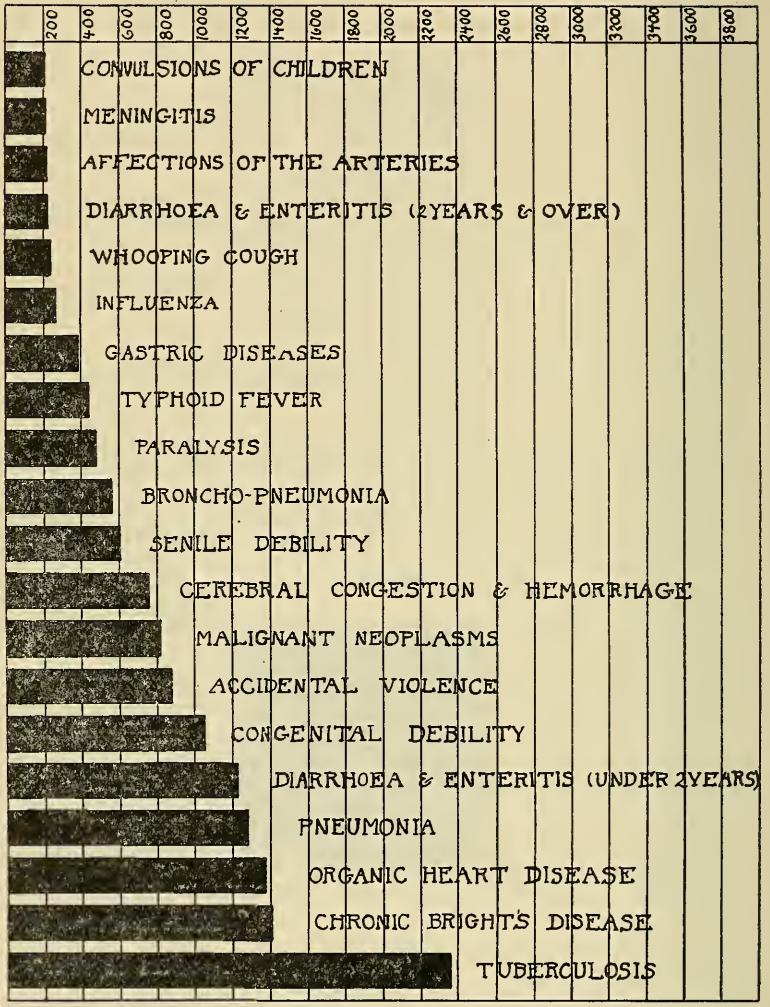


CHART 7—*Nineteen Principal Causes of Death*, 1909.

In Table XVI the principal diseases are divided according to the percentages occurring in the three periods of life already used (*vide supra*), with the exception of senile debility, congenital debility, infantile convulsions, unspecified and ill-defined causes, the three former of which fall by reason of their classification in only one period of life.

Deaths in the middle period of life have an importance from the economic standpoint far greater than those occurring in either extreme of life. In Chart 8 the principal causes of death are arranged according to their importance as causes of death, between the ages of 15 and 45 years, for the State of Maryland.

Tuberculosis of the lungs still easily retains first place on this chart. Typhoid fever, which ranks thirteenth on the preceding chart, comes in second place, with this arrangement; pneumonia falls to fifth place; accidental violence, which seems relatively unimportant in the preceding table, comes third in order of importance in the middle period of life. Heart disease ranks sixth and Bright's disease fourth, with this latter arrangement.

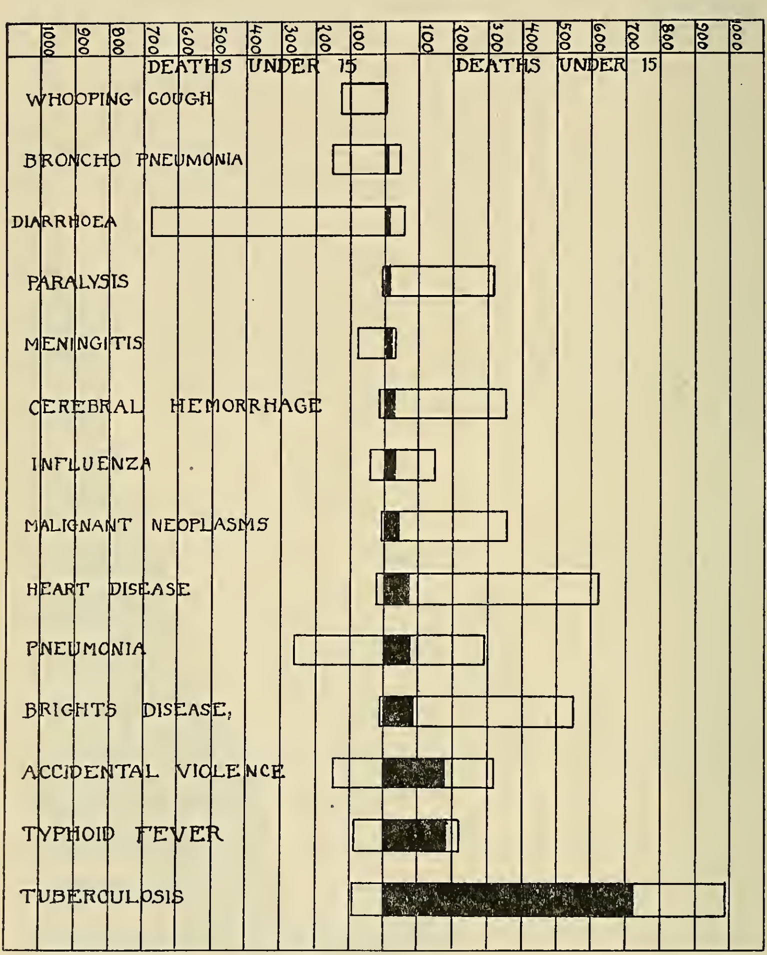


CHART 8—*Principal Causes of Death, Classified According to Their Importance, in the Middle Period of Life.*

AGE DISTRIBUTION OF PRINCIPAL DISEASES.

TABLE XVI.

Deaths from Fifteen Princidal Causes in Maryland (Exclusive of Baltimore, 1909), Showing Number and Percentage of Deaths in Each of Three Age Periods.

	Number.	Per Cent. in Each Period.
Typhoid Fever.		
Under 15	80	26.32
15 to 45	184	60.53
45 and over	40	13.16
	304	
Paralysis.		
Under 15	3	.94
15 to 45	17	5.64
45 and over	299	93.73
	319	
Bright's Disease.		
Under 15	8	1.43
15 to 45	88	15.77
45 and over	462	82.80
	558	
Whooping-Cough.		
Under 15	121	98.37
15 to 45	2	1.63
45 and over	..	....
	123	
Heart Disease.		
Under 15	15	2.35
15 to 45	81	12.72
54 and over	541	84.93
	647	
Malignant Neoplasms.		
Under 15	4	1.11
15 to 45	43	11.88
45 and over	315	87.04
	362	
Broncho-Pneumonia.		
Under 15	156	80.41
15 to 45	5	2.58
45 and over	33	17.01
	194	

TABLE XVI—*Continued.*

	Number.	Per Cent. in Each Period.
ACCIDENTAL VIOLENCE.		
Under 15	146	31.40
15 to 45	180	38.70
45 and over	139	27.74
	465	
TUBERCULOSIS (Lungs and Larynx).		
Under 15	98	8.99
15 to 45	722	66.30
45 and over	269	24.70
	1,089	
PNEUMONIA.		
Under 15	256	46.72
15 to 45	83	15.15
45 and over	209	38.14
	548	
CEREBRAL HEMORRHAGE.		
Under 15	9	1.93
15 to 45	30	6.44
45 and over	427	91.63
	466	
DIARRHŒA AND ENTERITIS.		
Under 15	682	89.86
15 to 45	10	1.32
45 and over	67	8.83
	759	
INFLUENZA.		
Under 15	36	19.30
15 to 45	31	16.67
45 and over	119	63.98
	186	
MENINGITIS.		
Under 15	81	75.51
15 to 45	20	18.69
45 and over	6	5.61
	107	
OTHER CAUSES.		
Congenital Debility (under 1 year)	426	
Senile Debility (over 55)	388	
Convulsions of Children (less than 10 years)	110	
Unspecified or Ill-Defined Causes	347	

The age distribution of the principal causes of death is shown in Charts Nos. 9, 10, 11, 12, 13. The age distribution of the general mortality is shown in Chart No. 9. These charts illustrate the age distribution of the principal causes of death, with the exception of senile debility, congenital debility and infantile convulsions (whose age distribution is fixed by their classification) and the unclassified diseases. By referring to Chart No. 9 it will be seen that, as has been shown in previous charts, 29.16% of the general mortality occurs under the age of 5. The curve rapidly declines to the ages between 10 and 15 years, when the lowest actual mortality is reached. The actual number of deaths thereafter remains fairly uniform until after 60, when the number of deaths increases. A slight rise appears in the period of 25 to 30. This may be also noted in the corresponding chart for 1907 and 1908, and it is probably more due to a defective return of ages at this period than to actual susceptibility of persons at this age. The general mortality ranges below 10% for all periods except the first quinquennium and the quinquennial periods after 60. *Pneumonia* has an age distribution corresponding closely to the age distribution of general mortality. If the pneumonia and broncho-pneumonia curves were combined, the analogy would appear even more striking. This fact shows that the term pneumonia, as generally employed, is a very generic one, and relates to a number of diseases, mostly infectious, of which pneumonia is the terminal or secondary symptom. Both pneumonia and broncho-pneumonia are important causes of death only at the extremes of life. After the age of 10 years broncho-pneumonia forms a small factor in the mortality, except for persons over 65, although it will be seen from the chart the very large proportion of deaths it causes in the first five years of life. *Broncho-pneumonia,* has an almost wholly infantile distribution. No deaths appear either in the chart for 1904 or 1905 after the age of 15 years. In the chart for 1906, 48 deaths from broncho-pneumonia, 18 from diphtheria and 2 from whooping-cough appear after the age of 15 years. In the chart for 1907, 50 deaths from broncho-pneumonia, 14 from diphtheria and none from whooping-cough appear after the age of 15 years. Over 98% of the mortality from whooping-cough occurs in the first five years of life. In the Table XVI. for 1909, 2 deaths from whooping-cough appear after the age of 10 years.

Organic diseases of the heart, malignant neoplasms, cerebral hemorrhage, paralysis and *Bright's disease* occur almost entirely in the late periods of life. The mortality from cerebral hemorrhage rises above 5% at 50 to 55, and increases rapidly thereafter, and reaches its fastigium at 70 to 75. Malignant neoplasms rise above 5% at from 40 to 45 years; organic heart disease, at 45 to 50 years; paralysis, 50 to 55 years, and Bright's disease, 45 to 50 years.

Tuberculosis—Tuberculosis is a disease of early adult life. It will be noted in the chart that the mortality reaches slightly over 3% from ages under 5 until the fifteenth year, when there is a rapid rise, the curve reaching its fastigium at 20 to 30 years, and declining more slowly until it passes below the 5% line at 50 to 55 years.

Typhoid Fever—Typhoid fever is a disease of early adult life. The curve also reaches its fastigium at 20 to 30, and declines still more rapidly until the fortieth year, when it passes below the 5% line. After 60 years the mortality becomes very small.

The curve for *accidental violence* has two apices—one in the first quinquennial period, and the other for the fourth quinquennial period—that is, the periods of danger from accidental violence are infancy and adolescence. The causes of accidental violence in infancy are due to the inability of children to protect themselves and to the carelessness of parents. Burns and scalds account for a large portion of the mortality, and accidental drowning for a further considerable portion. A large number of these deaths are among the children of colored persons and foreigners, and are due on the one hand to the carelessness in handling fire, and on the other to the ready access to water afforded by the Maryland coast line and Chesapeake Bay and its tributaries. The use of gasoline for cooking and heating in Baltimore is responsible for many of the accidental deaths by burning. The high mortality at ages from 20 to 25 may be accounted for by the fact that a large number of young men commence their industrial careers at this age, and handle machinery before they have learned the necessity of care and the experience necessary to avoid accident. The percentages given on these charts are shown in the following table (Table No. XVII):

TABLE XVII.

AGE DISTRIBUTION OF MORTALITY FROM TWELVE DISEASES BY PERCENTAGES—RURAL DISTRICTS. 1909.

Causes of Death.	0 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Typhoid Fever......	8.55	7.89	9.87	14.47	16.78	10.86	7.57	6.91	3.95	3.29	2.63	2.30	2.63	1.65	.33	.....	.....	.33
Tuberculosis, Pul....	3.40	1.74	3.86	10.65	16.80	13.41	11.94	7.62	5.88	6.52	5.51	3.67	3.67	1.93	1.74	.55	.73	.37
Influenza	15.05	1.61	2.69	2.69	3.23	2.15	4.30	1.61	2.69	2.69	1.61	4.30	5.91	11.29	13.44	10.75	12.90	1.08
Heart Disease.......	1.10	.78	.47	1.10	1.73	1.73	2.20	1.57	4.40	5.65	7.22	8.32	10.52	13.33	15.39	12.87	10.83	.78
Broncho-Pneumonia ..	77.32	2.94	.52	.52	.52	.....	1.03	.....	.52	.52	.....	2.42	2.94	2.94	2.94	2.94	4.13	....
Pneumonia	41.24	4.38	1.28	3.10	2.55	1.28	3.10	3.10	2.01	2.19	3.10	4.38	5.47	7.12	5.84	4.38	6.02	....
Bright's Disease......	.36	.18	.90	.90	1.97	2.15	3.05	4.30	3.47	6.27	7.35	9.68	12.26	13.80	14.16	9.68	8.42	.18
Cerebral Hemorrhage	1.72	.....	.21	.43	.....	1.29	1.29	.67	2.79	3.65	6.22	9.01	12.23	15.67	16.31	13.30	14.38	.88
Paralysis	.94	.....	.....	.31	.....	.....	2.19	1.29	1.57	1.57	5.96	8.46	7.84	15 98	19.75	15.05	19.12	....
Malignant Neoplasms	.28	.28	.55	.....	.28	.86	1.11	3.59	6.08	9.94	11.05	11.88	12.15	17.68	10.22	7.18	5.80	1.11
Accidental Violence..	21.51	4.52	5.38	4.95	9.46	8.17	5.16	5.38	5.59	5.59	4.95	3.66	3.66	1 94	1.51	2.39	3.66	3.23
Diarrhœa & Enteritis	89.06	.79	.....	.26	.26	.40	.13	.....	.26	.40	.40	.53	.79	.79	2.11	.79	3.03	....
Deaths—all causes...	28.74	2.13	1.80	2.99	4.07	3.44	3.31	3.12	2.78	3.53	3.84	4.20	5.26	6.20	7.92	5.32	7.45	.62

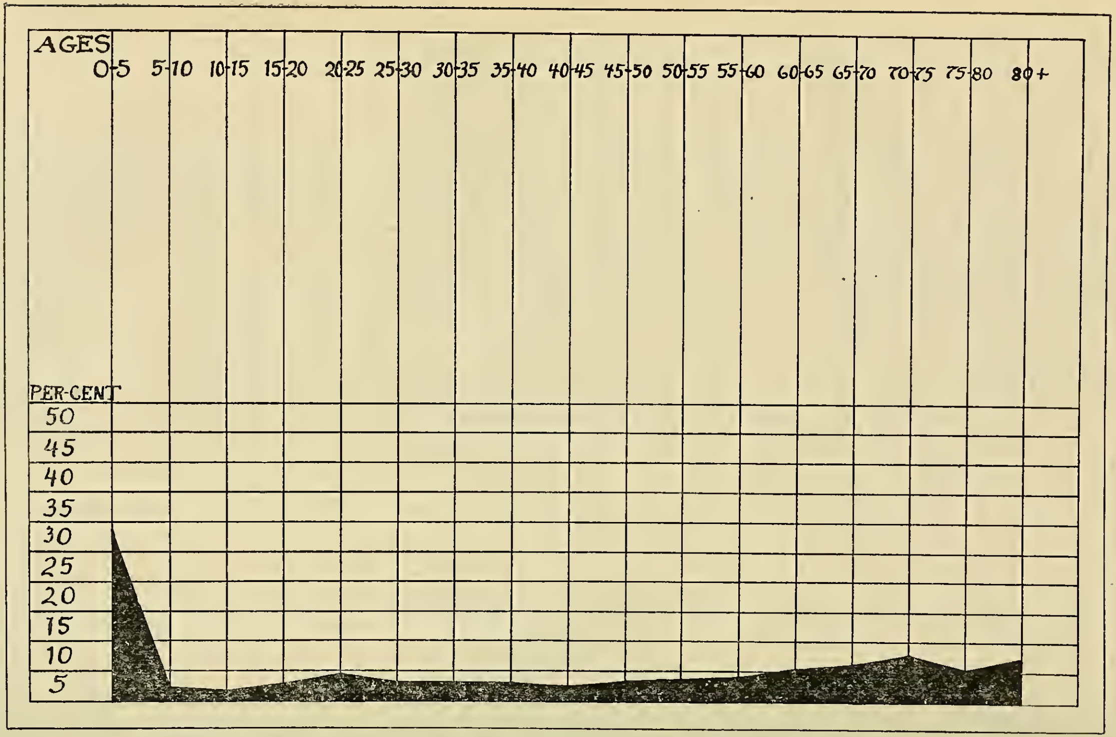
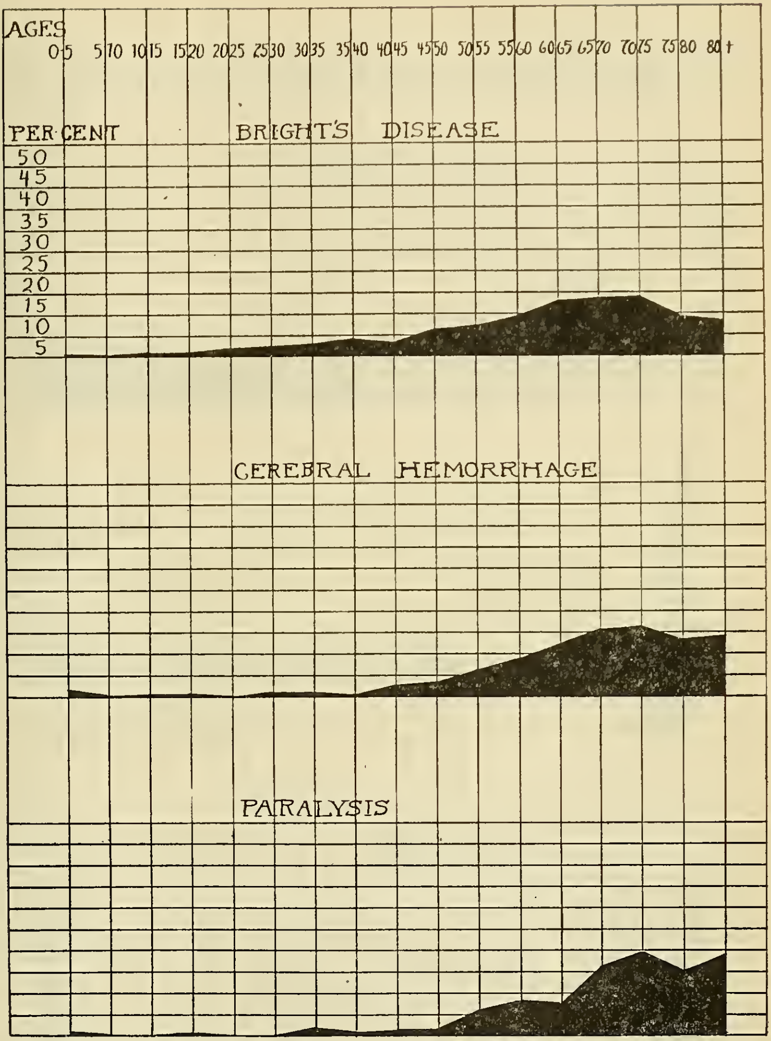


Chart 9—*Age Distribution of the General Mortality*, 1909.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80 +
PER CENT
BRIGHT'S DISEASE
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45
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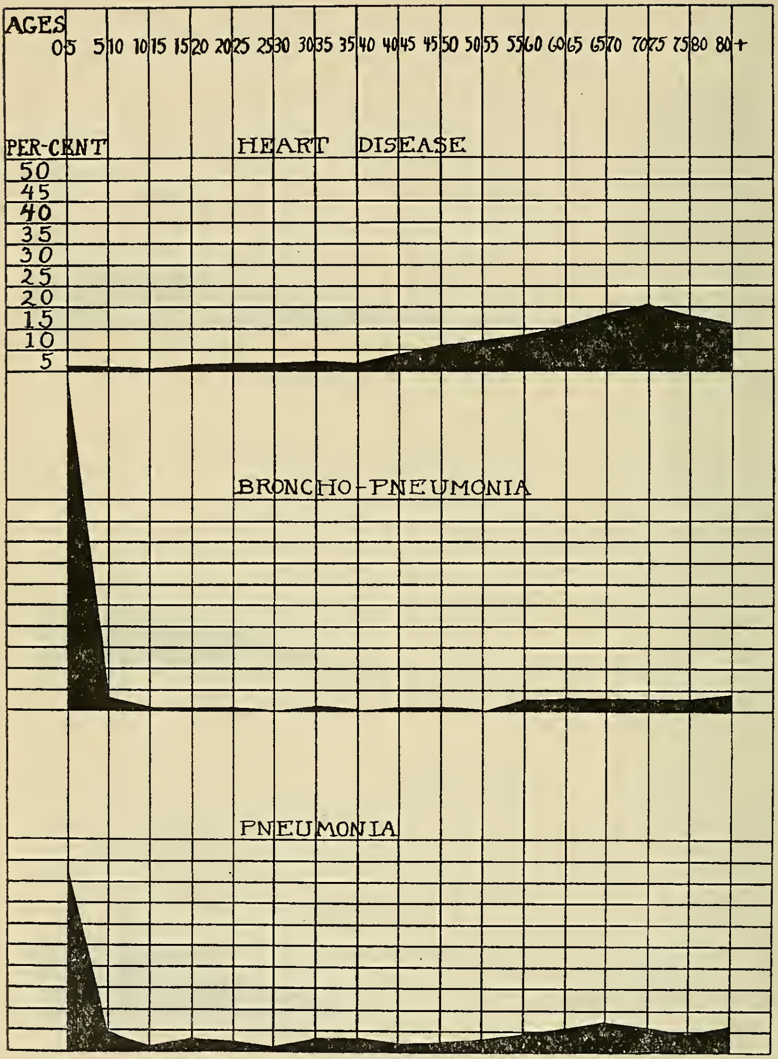
5
CEREBRAL HEMORRHAGE
PARALYSIS

CHART 10.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80+
PER-CENT
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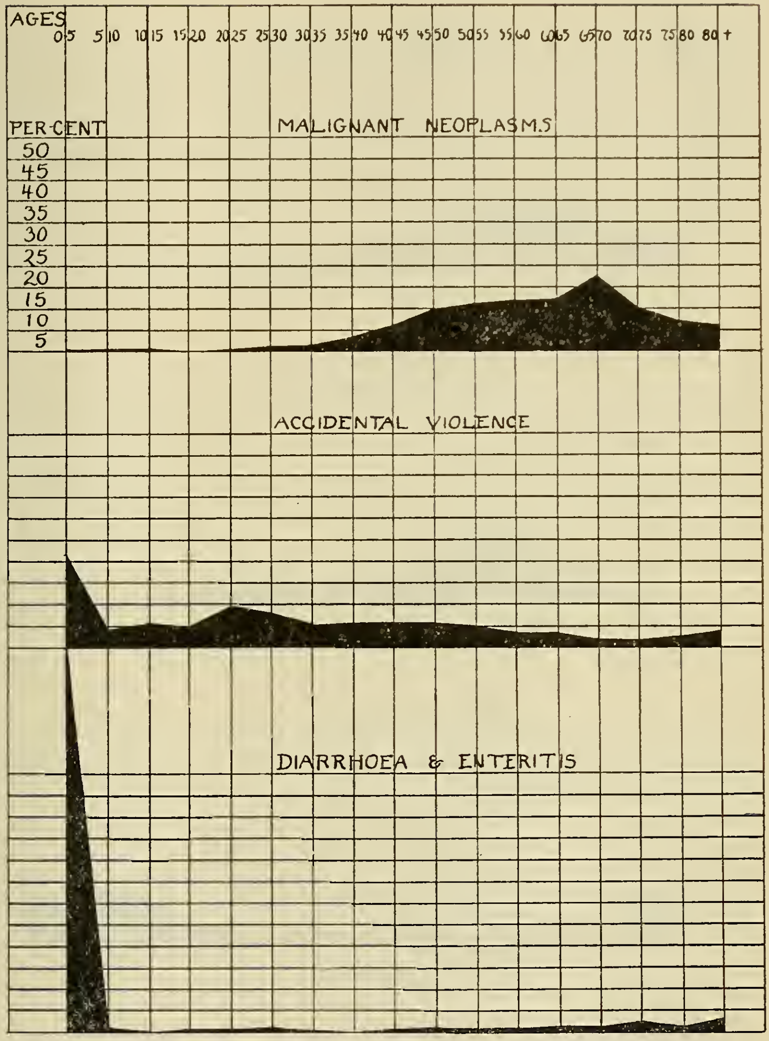
5
HEART DISEASE
BRONCHO-PNEUMONIA
PNEUMONIA

Chart. 11.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80 +
PER-CENT
50
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5
MALIGNANT NEOPLASMS
ACCIDENTAL VIOLENCE
DIARRHOEA & ENTERITIS

CHART 12.

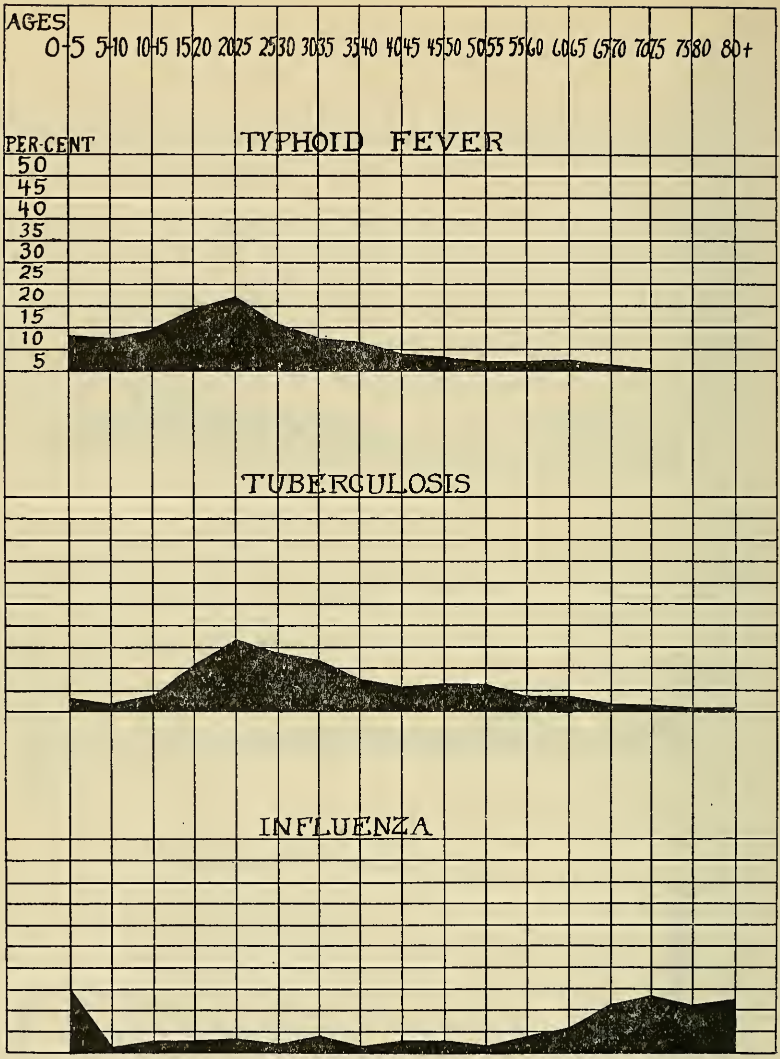


CHART 13.

The following table (Table No. XVIII) gives the deaths from the five principal respiratory diseases in rural Maryland for the years 1901 to 1909, inclusive. The five diseases mentioned are *influenza, acute bronchitis, broncho-pneumonia, pneumonia* and *pulmonary tuberculosis.*

TABLE XVIII.

DEATHS FROM FIVE PRINCIPAL RESPIRATORY DISEASES IN RURAL MARYLAND, 1901-1909, INCLUSIVE.

Diseases.	Deaths.									Percentage of Total Mortality.								
	1901	1902	1903	1904	1905	1906	1907	1908	1909	1901	1902	1903	1904	1905	1906	1907	1908	1909
Influenza	393	83	145	217	144	90	287	251	186	4.44	0.98	1.69	2.28	1.64	0.95	2.93	2.54	1.91
Acute Bronchitis.....	75	44	77	147	104	102	103	99	115	0.85	0.53	0.89	1.54	1.18	1.07	1.05	1.00	1.18
Broncho-Pneumonia .	105	106	132	131	109	159	159	182	194	1.19	1.26	1.54	1.37	1.23	1.68	1.62	1.85	1.88
Pneumonia	652	537	562	662	532	527	534	469	548	7.36	6.36	6.50	6.94	6.04	5.57	5.45	4.77	5.61
Tuberculosis	1,044	1,064	1,075	1,286	1,115	1,005	1,000	1,035	1,089	11.78	12.63	12.55	12.94	12.67	10.57	10.21	10.50	11.16
Total deaths......	8,857	8,437	8,567	9,532	8,796	9,459	9,792	9,849	9,762									

It will be seen by reference to the preceding table that the influenza figures have shown marked variations. The heaviest influenza mortality occurred in the year 1901, 393 deaths, or a proportionate mortality of 4.44%. In consonance with the epidemic mortality from influenza, the pneumonia figures show a like elevation. The same is to be observed in the year 1904, and also in 1907 and 1908, when a similar epidemic of influenza appears to have prevailed in the rural districts. While the deaths from influenza have diminished in 1909, there is a decided increase in the mortality from pneumonia. The variations in the figures of acute bronchitis are not of special interest, as the majority of these should either go in the pneumonia or influenza column. The broncho-pneumonia figures have shown a fairly steady increase up to 1905, in which both the figures for influenza and pneumonia are low, when there was a slight decrease, following which there was a slow but constant rise up until 1909, when a decided increase is noted. The figures for pulmonary tuberculosis also showed a decline in 1906, 1907, and a very slight rise in 1908 and 1909, after a slow but constant rise in the preceding four years. The association and interdependence of these diseases is shown on the accompanying chart (Chart No. 14). The exciting cause in determining the mortality from these diseases is probably influenza, which is highly contagious and always epidemic once or more annually. The correspondence between the influenza and pneumonia figures is especially striking. In the year 1904 all five of these show a simultaneous rise, and a simultaneous decline in 1905. With the exception of broncho-pneumonia, the same is true of 1906. In the year 1907 the influenza figures show a marked rise. In 1908 three of these diseases—influenza, acute bronchitis and pneumonia—show the usual decline following a rise, while the figures for broncho-pneumonia and tuberculosis show an increase over the preceding year. There is an unusual rise in the mortality of these diseases, except influenza, but more specially pneumonia and tuberculosis, pneumonia showing relatively greater increase, in the year 1909. The year 1904 registers the maximum for all five causes, excepting influenza, in which, although the mortality was high, it did not reach the epidemic figures of 1901. According to the Maryland records for 1909, the pneumonia mortality in the rural districts averages a little over 50% of that from tuberculosis.

TABLE XIX.

DEATHS FROM TUBERCULOIS—RURAL MARYLAND, 1909.

1904	585	709
1905	457	670
1906	484	535
1907	464	536
1908	459	576
1909	498	602
Average for 6 years	491	605
Median population	357,613	358,081
Death rate, per 1,000	10.93	16.89

It would appear that tuberculosis, being a chronic disease, would not show any notable seasonal or annual variations, but it is evident from an examination of this chart, as well as those of seasonal mortality and the above table (Table No. XIX), that tuberculosis shows variations corresponding with the acute epidemic respiratory diseases. The reason for this is evidently to be found in the influence of the acute infections, especially pneumonia and influenza, in determining the death of tuberculous persons. Following years of influenza epidemics, the tuberculosis mortality should show a considerable decline, owing to the elimination of a considerable number of advanced consumptives. This appears to have occurred in 1905, but does not appear to have taken place after the high epidemic mortality from influenza in 1901. It can be easily understood that this fall need not necessarily take place at all, as it is well known that influenza not only determines death in tuberculosis many times, but that it may bring to an acute or advanced stage many consumptives who were previously in a chronic, non-progressive stage. There is noted an increase in the number of deaths and death rate from tuberculosis in 1909. From 1904 until 1908 there was a steady decrease, in which year we noted a slight increase, which is more than doubled in 1909.

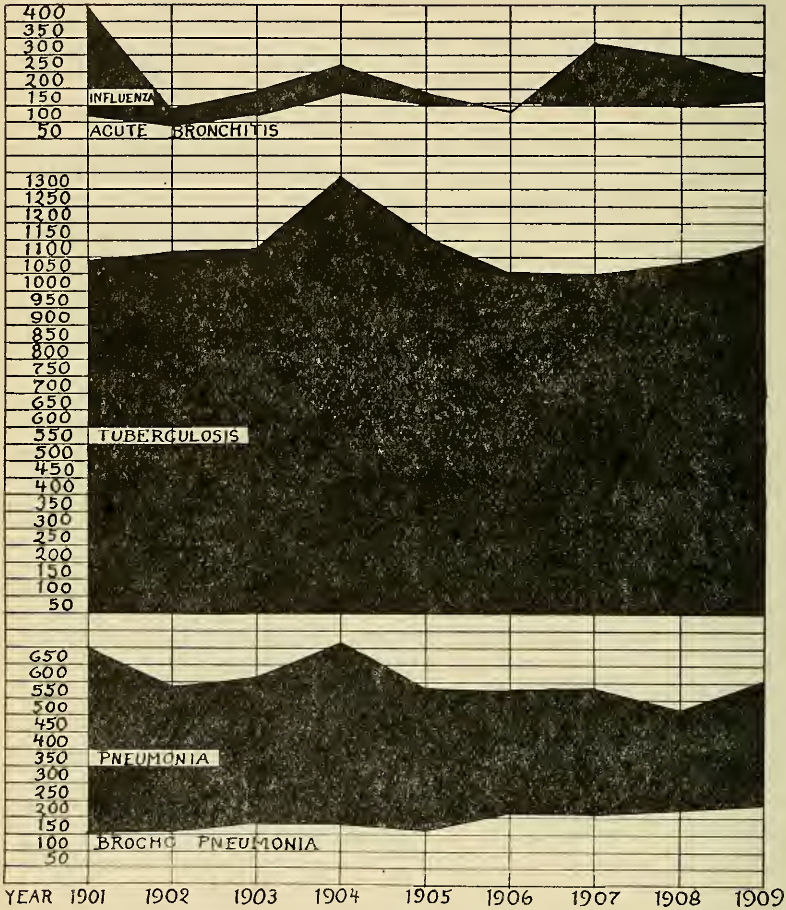
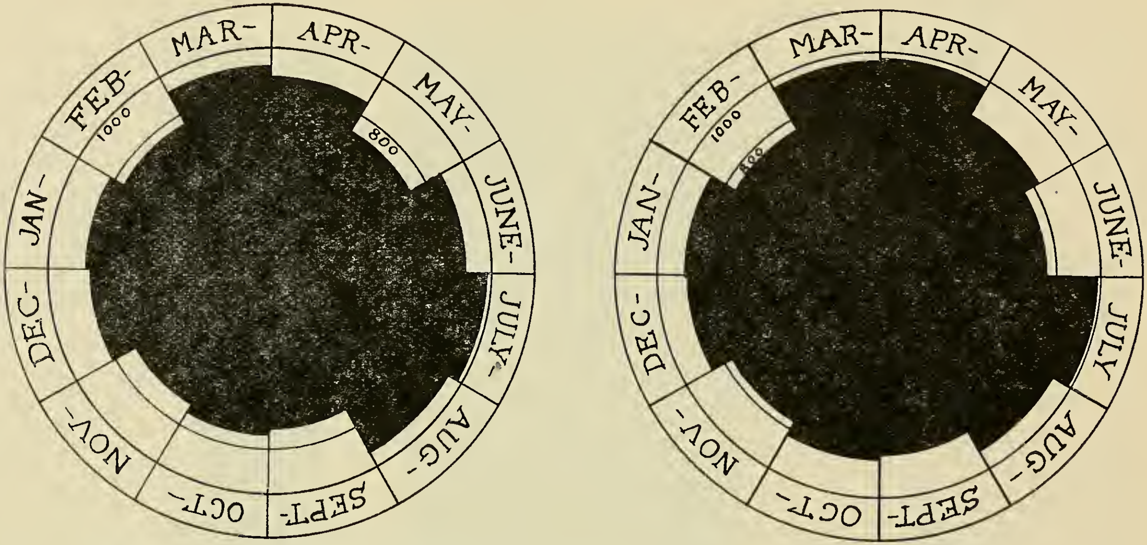


CHART 14—*Mortality from Five Respiratory Diseases*, 1901-1909.

SEASONAL INCIDENCE OF THE MORTALITY.

The seasonal incidence of the general mortality is shown separately for Baltimore and the rural districts in Chart No. 15.

It will be seen that the monthly mortality, as shown in the black portion of the charts, is of somewhat oval shape, with the poles lying in the winter and summer months, which are the seasons of greatest mortality. Generally speaking, the mortality may be divided into two classes—diseases of the intestines, prevalent in the summer months, and diseases of the lungs, prevalent in the winter. The gastro-intestinal diseases reach their fastigium in the height of the summer. July is the month of greatest mortality in the city and in the rural districts. In 1908 January was the month of greatest mortality in the city, and January and July the months of greatest mortality for the rural districts. In the year 1909 the mortality of March approaches that of July for the rural districts, and the mortality of both March and April approach that of July for Baltimore City. February is the month of least mortality in Baltimore City, and November in the rural districts. The expansion of the black portion of the chart during July and August is due almost entirely to the acute gastro-intestinal diseases of children and cholera infantum. The mortality during the winter months is due mainly to pneumonia and influenza. While the summer mortality affects mainly children, the winter mortality affects both extremes of life (infancy and old age). The sudden rise from the months of low mortality, May and June, to the months of high mortality, July and August, produces a very notable eccentricity in the figure. This is usually marked in the city, where the mortality increases suddenly to its second greatest height during the month of July. In the rural districts the rise in the mortality is somewhat slower, and the fall does not become marked until the end of August. The circles on the charts indicate the actual number of deaths in the two specified divisions of Maryland. While the populations of Baltimore and the rural districts are nearly equal, the mortality in Baltimore City is considerably higher, as appears in the chart. In the rural districts there are six months in which the number of deaths is less than 800, while in Baltimore City there are but three months —February, November and December—in which the number of deaths falls below 800. A comparison of this chart with that of the preceding year shows a marked correspondence in the general figures of the rural and urban districts. The figure of the chart is apparently not subject to many changes, although it may rotate somewhat, either to a later or an earlier season. In the winter months, March furnished the highest mortality in both 1905 and 1906 and January in 1907. In 1909, July furnished the highest mortality for the rural districts and Baltimore City.



RURAL DISTRICTS

BALTIMORE

1909

CHART 15.

In the following table the deaths by months for six years, ending 1909, are given for Baltimore City and the rural districts (Table XX). From this table it appears that on an average for six years July is the month of greatest mortality in both the city and the country, with March a close second. May is the month of least mortality in the rural districts, and June in Baltimore City.

The seasonal prevalence of eight prominent causes of death are given in the succeeding chart, No. 16.

In considering seasonal prevalence, two classes of diseases must be recognized—

1. Acute fatal diseases, where the period of infection corresponds more or less closely with the period of death.

2. Chronic fatal diseases, where the date of death is separated by a long interval from the date of infection.

The influence of pneumonia and influenza upon the tuberculosis mortality will be seen by a glance at the chart. The chronic degenerative diseases—cerebral apoplexy, heart disease and Bright's disease—show little seasonal variation, and are apparently not much dependent upon acute infection. The pneumonia curve and influenza curve always correspond very closely. The gastro-intestinal diseases show a marked antithesis to pneumonia in their seasonal distribution. The mortality from acute gastro-intestinal infections shows the greatest seasonal variation of any of these diseases, as already observed. To illustrate the striking influence of influenza and pneumonia upon tuberculosis, the curves of these diseases, together with those of acute bronchitis and broncho-pneumonia, have all been introduced in Chart No. 16.

TABLE XX.

DEATHS BY MONTH: FOR 1909, 1908, 1907, 1906, 1905, 1904.

	Rural Districts.						Total for	Baltimore City.						Tota. for
	1909	1908	1907	1906	1905	1904	6 yrs.	1909	1908	1907	1906	1905	1904	6 yrs.
January	828	980	898	739	744	853	5,042	875	1,201	1,041	906	852	962	5,837
February	772	888	914	819	763	909	5,065	757	859	923	890	883	1,023	5,335
March	910	847	890	855	845	982	5,329	984	961	1,075	991	958	1,076	6,045
April	872	754	745	698	684	816	4,569	986	889	917	909	893	898	5,492
May	721	721	670	659	619	733	4,123	829	776	826	866	787	869	4,953
June	788	712	641	695	633	677	4.206	759	816	722	738	878	754	4.667
July	985	983	861	950	891	883	5.553	988	1,065	1,058	1,079	1,162	1,071	6,423
August	932	951	1,066	899	822	971	5.541	910	807	1,068	865	874	921	5,445
September	714	789	887	738	740	727	4,595	808	757	832	816	813	804	4,830
October	737	727	795	813	691	672	4,435	835	725	884	933	822	773	4,972
November	700	708	712	795	667	664	4,246	772	780	839	822	901	796	4,909
December	803	729	713	798	697	645	4,385	873	799	1,005	930	860	872	5,339
Total.......	9,762	9,849	9,792	9.458	8,976	9.532	57.089	10,376	10.435	11.190	10,745	10,683	10,818	64,247

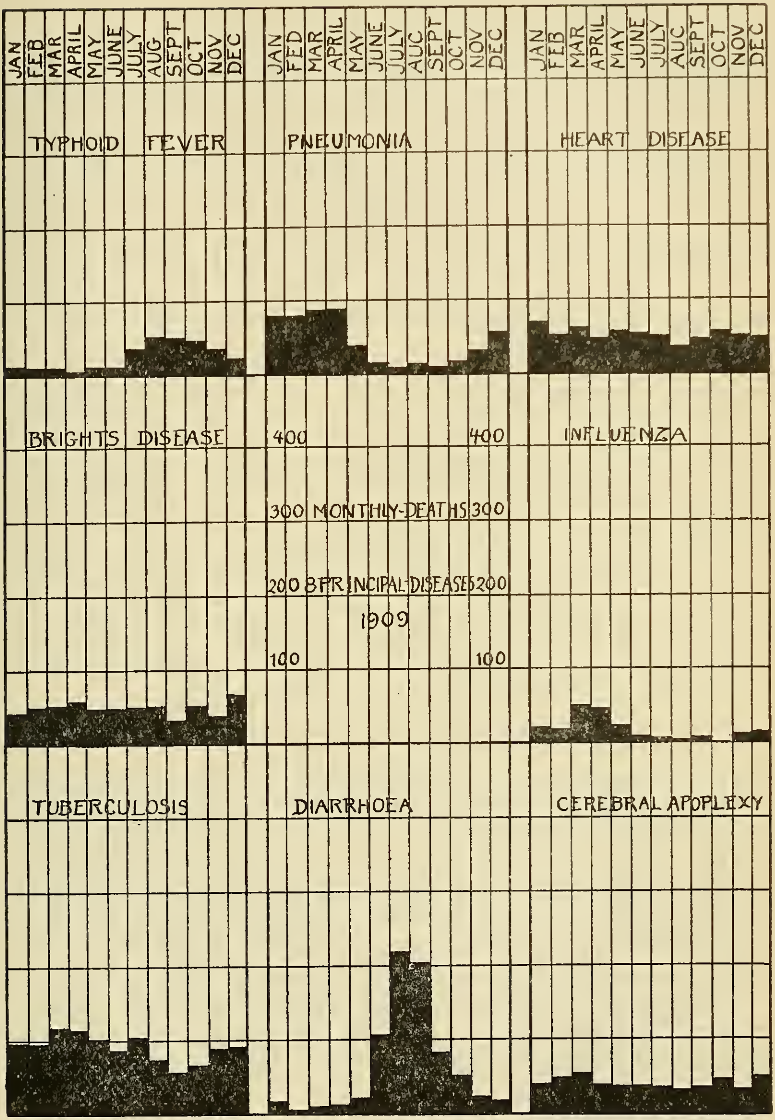

JAN FEB MAR APRIL MAY JUNE JULY AUG SEPT OCT NOV DEC
JAN FEB MAR APRIL MAY JUNE JULY AUG SEPT OCT NOV DEC
JAN FEB MAR APRIL MAY JUNE JULY AUG SEPT OCT NOV DEC
TYPHOID FEVER
PNEUMONIA
HEART DISEASE
BRIGHTS DISEASE
400 400
300 MONTHLY-DEATHS 300
200 8 PRINCIPAL-DISEASES 200
1909
100 100
INFLUENZA
TUBERCULOSIS
DIARRHOEA
CEREBRAL APOPLEXY

CHART 16.

EIGHT PROMINENT CAUSES OF DEATH BY MONTHS—RURAL DISTRICTS. 1909.

	Jan.	Feb.	Mar.	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
TYPHOID FEVER.	11	10	10	5	10	10	35	56	55	44	36	22
PNEUMONIA.	80	80	88	90	40	17	9	15	13	18	37	61
HEART DISEASE.	68	55	67	47	61	53	49	35	47	56	50	49
BRIGHT'S DISEASE.	40	48	49	56	45	45	47	48	30	48	36	66
INFLUENZA.	20	18	49	43	21	7	4	2	4	..	8	10
TUBERCULOSIS.	96	97	119	115	101	83	106	71	54	67	88	92
DIARRHŒA.	14	5	7	10	20	108	222	203	81	50	21	18
CEREBRAL APOPLEXY.	38	47	51	38	35	36	34	31	34	45	29	48

INFECTIONS OF ORGANS.

The succeeding table and chart (Chart 17, Table XXI) show the comparative susceptibility of the several organs to infection. In general the table and charts have been arranged so as to show infections of the specific organ, and systemic infections, principally of the specified organ. The total number of deaths considered in this table is 9,740, or about one-half of the total mortality. Certain other important classes of diseases, such as degenerations, congenital diseases and accidents, are not considered in the tabulation.

It will be seen by reference to the table and chart that the mass of the inflammatory diseases affect the lungs and alimentary canal, infections of the lungs ranking very much higher than those of the other organs.

The special predilection of the tubercle bacillus for the lung has been previously recognized, but the fact that the majority of pathogenic organisms find in the lungs their most favorable habitat is not so well recognized. The organisms of the enteric group are, of course, an exception to this rule.

TABLE XXI.

Parasitic Diseases, Showing the Organ Affected.

Rural Districts.

Respiratory Infections—		
Influenza, laryngeal and pulmonary tuberculosis, bronchitis, broncho-pneumonia, pneumonia, pleurisy, pulmonary abscess and gangrene	2,229	
Systemic Infections, Principally Respiratory—		
Measles, scarlet fever, whooping-cough, diphtheria	305	
		2,534
Infections of the Alimentary Tract—		
Typhoid fever, cholera, dysentery, abdominal tuberculosis, gastritis, cholera infantum, peritonitis, appendicitis		1,583
Infections of the Urinary Tract—		
Perinephiritis, pyonephrosis, pyelitis, cystitis, nephrolithiasis	50	
Systemic Infections, Principally of the Kidneys—		
Acute nephritis, other inflammations of the kidneys and their adnexa	86	
		136
Infections of the Nervous System—		
Rabies, meningeal tuberculosis, encephalitis, meningitis, tetanus, chorea		179
Systemic Infections, not Localized in any Organ or Tissue—		
Pyemia and espticæmia, general tuberculosis, syphilis		55
Infections of the Skin—		
Erysipelas, gangrene, abscess and furuncle, dermatitis	72	
Systemic Infections, Principally of the Skin—		
Smallpox, scrofula	3	
		75
Arthritic Inefctions—		
Acute rheumatism	41	
Systemic Infections, Principally Arthritic—		
Chronic rheumatism, gout	13	
		54
Infections of the Female Organs of Reproduction—		
Endometritis, metritis, salpingitis, puerperal septicæmia		50
Infections of the Liver—		
Cholangitis, hepatitis, cholelithiasis		91
Infections of the Bones—		
Tuberculosis osteomyelitis		21
Infections of the Blood—		
Malaria		22
Total		4,800

TABLE XXI—*Continued.*

PARASITIC DISEASES, SHOWING THE ORGAN AFFECTED.

MARYLAND.

Respiratory Infections—		
Influenza, laryngeal and pulmonary tuberculosis, bronchitis, broncho-pneumonia, pneumonia, pleurisy, pulmonary abscess and gangrene	5,005	
Systemic Infections, Principally Respiratory—		
Measles, scarlet fever, whooping-cough, diphtheria	477	
	——	5,482
Infections of the Alimentary Tract—		
Typhoid fever, cholera, dysentery, abdominal tuberculosis, gastritis, enteritis, cholera infantum, peritonitis, appendicitis		2,757
Infections of the Urinary Tract—		
Perinephritis, pyonephrosis, pyelitis, cystitis, nephrolithiasis	95	
Systemic Infections, Principally of the Kidneys—		
Acute nephritis, other inflammations of the kidneys and their adnexa	171	
	——	266
Infections of the Nervous System—		
Rabies, meningeal tuberculosis, encephalitis, meningitis, tetanus, chorea		372
Systemic Infections, not Localized in any Organ or Tissue—		
Pyemia and septicæmia, general tuberculosis, syphilis		172
Infection of the Skin—		
Erysipelas, gangrene, abscess and furuncle, dematitis	140	
Systemic Infections, Principally of the Skin—		
Smallpox, scrofula	5	
	——	145
Atrhritic Infections—		
Acute Rheumatism	100	
Systemic Infections, Principally Arthritic—		
Chronic rheumatism, gout	26	
	—	126
Infections of the Female Organis of Reproduction—		
Endometritis, metritis, salpingitis, puerperal septicæmia		112
Infections of the Liver—		
Cholangitis, hepatitis, cholithiasis		220
Infections of the Bones—		
Tuberculosis, osteomyelitis		56
Infections of the Blood—		
Malaria		32
Total		9,740

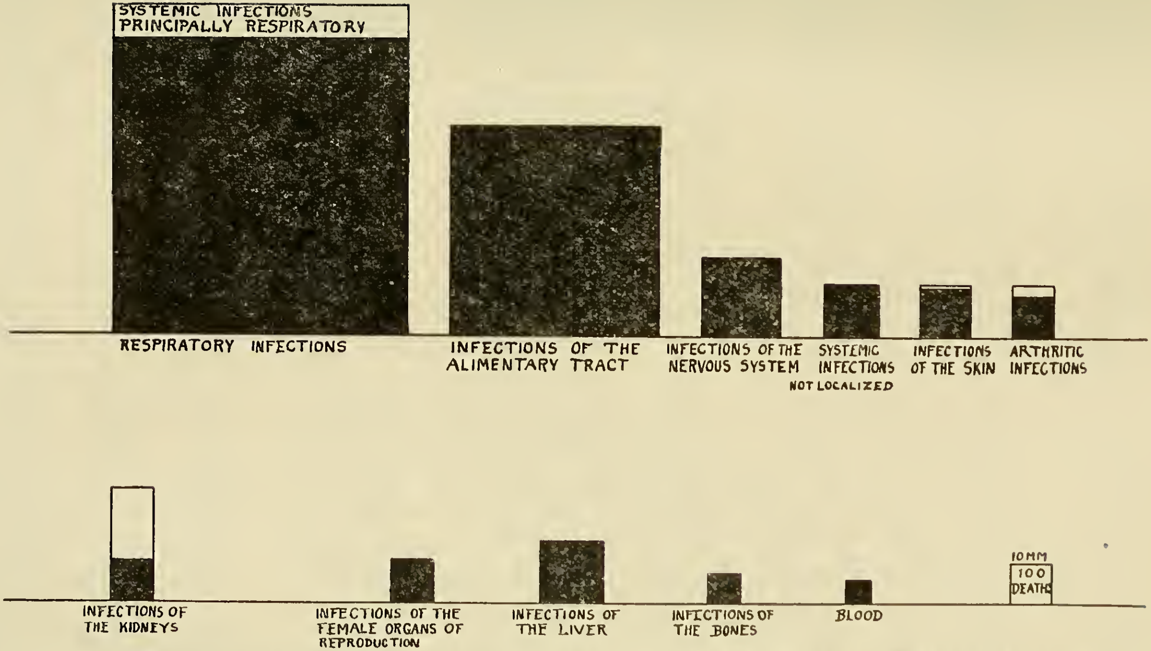


CHART 17—*Comparative Susceptibility of the Several Organs to Parasitic Infections. Maryland Mortality,* 1909.

SPECIAL CAUSES OF DEATH.

Tables A, B and C, at the end of the report on Vital Statistics, give the causes of death, the number of each race and sex, the number dying in each county, the age at death, and the seasonal distribution of the mortality for the 179 principal causes of death recognized in the international classification.

Many of the diseases recognized in this classification are only important causes of mortality during epidemics, and are not commonly prevalent in this State. Others are limited to Europe, or the smaller geographical or climatic divisions.

Among the diseases of the Bertillon classification, from which there were no deaths in Maryland during 1908, were typhus fever, relapsing fever, miliary fever, Asiatic cholera, bubonic plague, yellow fever, leprosy, glanders.

Pellagra—Two deaths from this cause in Baltimore City and one in the rural districts. This was probably due to the great amount of literature upon the subject which was published during 1908 and 1909, which acquainted the physicians throughout the State with the manfestations of this disease, thereby enabling them to make a diagnosis. We can expect an increase in the number of cases reported for the next three or four years.

Smallpox—Deaths in Baltimore City, none; deaths in the rural districts in Maryland, none. During 1905 there was one death from smallpox in the rural districts, which occurred in Calvert county. In 1907 there were no deaths from smallpox either in Baltimore City or rural districts, and in 1908 there were no deaths from this disease.

Anthrax—One death occurred in Baltimore City and one in Montgomery county in 1907. In 1908 there were no deaths from this cause in Maryland. In 1909 there was one death in Frederick.

Rabies—There were 2 deaths reported from hydrophobia in 1906. In 1908 there were 6 deaths in Baltimore City, and one in 1909 from the same cause.

Alcoholism—Deaths in Baltimore City, 40; in the counties, 44; total, 84. Deaths in the local option counties, 4%. Deaths from this cause were almost equally distributed in Baltimore and the rural districts.

Occupational Poisonings—One death occurred in Baltimore City from this cause, and none in the rural districts.

Diffuse Meningo-Encephalitis and Other Forms of Insanity and Epilepsy—From diffuse meningo-encephalitis, 23 deaths in the rural districts and 29 in Baltimore City. From other forms of insanity, 32 deaths in the rural districts and 5 in Baltimore City. From epilepsy, 30 deaths in the rural districts and 15 in Baltimore City. These deaths occurred mainly in the counties where the asylums are situated, the Baltimore City figures including deaths in Bayview Asylum.

Tetanus—Deaths in the rural districts, 20; deaths in Baltimore City, 19; total, 48. The greatest number of deaths in any county occurred in Allegany county, 6; Charles county second in order, with 4 deaths; Frederick county third, with 4 deaths. In 1905 Frederick county stood first, with 7 deaths; Anne Arundel county second, with 5 deaths. In 1906 Anne Arundel county stood first, with 5 deaths. In 1907 Baltimore county stood first, with 7 deaths; Charles county second, with 4; and Allegany and Anne Arundel counties third, each with 3 deaths. In 1908 Anne Arundel county stood first, with 5 deaths, and Baltimore county second, with 4 deaths. The figures for tetanus are in a great proportion due to improper care of new-born infants, as was shown by the figures for the rural districts, out of 29 deaths 14 occurred in the first year of life. Although this factor of the mortality is a small one, it is always easily preventable, and the painful and fatal nature of the disease should inspire the physicians in the infected districts to endeavor to have all possible precautions used for its prevention, especially to instruct the nurses having charge of the new-born in the simple and necessary measures of asepis.

Intestinal Parasites—Deaths in the rural districts, none; in Baltimore City, 3; total, 3. The most common intestinal parasite causing death in the United States is the *uncinaria Americana*. Not more than a dozen cases of this disease have been reported in Maryland.

Pregnancy—Deaths from this cause amounted to .0.96% of the total mortality. About one-half of this mortality is distinctly preventable, namely, nearly all forms of puerperal septicæmia, and most of the mortality from hemorrhage.

Suicide—Deaths in the rural districts, 73; deaths in Baltimore City, 101; total, 174. The most common form of suicide was by shooting, 58; the second most common cause was suicide by poisoning, 45; hanging ranks third, 29.

Accidental Violence—Accidental violence caused 1.64% of the total mortality, against 3.92% in 1908. Among the special forms of violence. other than mechanical, accidental submersion ranks first, 145; and burns and scalds next, 140. Among the deaths from accidental violence Baltimore county furnished the highest proportion of the total mortality, 103 deaths, or 8.28% of the total mortality. Allegany county, with 26 deaths, ranks second.. In the deaths between the ages of 15 and 60 in Baltimore county during 1909 3.25% were from violence.

The highest percentage of deaths from this cause was in Allegany county, 9.24%. None of the other counties returned a proportionate mortality of more than 1%. Three of the counties, namely, Calvert, Caroline and Talbot, report no deaths.

Drowning—There were 145 deaths from this cause in Maryland during 1909, against 162 during 1908 and 155 during 1907.

Electrical Shock—Rural districts, 5; Baltimore City, none; total, 5. The deaths in the rural districts were as follows: Harford county, 1; Baltimore county, 1; Montgomery county, 1; Carroll county, 1; Prince George's county, 1; total, 5. In 1908 there were 7 deaths from this cause—rural districts, 7; Baltimore City, none.

Unspecified and Undefined Causes—The percentage of unknown and unspecified cause of death occurring in 1906 was 3.48%. In 1907 the percentage of unknown and unspecified causes of death was 3.80%. In 1908 the percentage was 6.54%, and in 1909 3.10%. This classification does not include the number of absolutely indefinite causes, such as hemorrhage, dropsy, sudden death and convulsions.

DURATION OF LIFE.

The third important element in the statistical consideration of the population is the duration of life. The main purpose in the organization of sanitary jurisdictions is to increase the duraton of life, and the executive powers and functions of the jurisdiction should always be directed to this point.

The duration of life is usually shown statistically by tables illustrating the mean duration and expectancy of life of those living at given ages.

These tables were considered by Dr. Farr to represent the health and prosperity of the country, and to furnish a fair estimate of its living capital. Dr. Farr considered a table constructed in this way to be a measure of the *life* of the community, and hence it was called by him a *biometer*.

Other tables popularly used by insurance companies are tables of *survivorship* and tables showing the probability of living for a stated period at a given age—the *probability of living one year* being the factor generally employed in the construction of this class of tables.

The tables of duration of life are frequently graphically shown by a system of co-ordinates of age and duration, or age and expectancy. These graphic curves have great illustrative value in vital statistics, but tables and curves of duration of life are open to some objections for sanitary purposes.

From the method of construction of this class of tables, only mean figures can be determined; the extremes of either great or brief duration of life are largely lost, and the eccentricities of the curve, which are of great sanitary importance, are not apparent.

All tables of duration of life are prognostic of the future, the conditions of life in any given year being assumed to remain constant during a future period of years, *i. e.*, 100 or 50 years. The particular problem which interests the sanitarian is, at what period of life does the mortality occur? His problem is directed in general to increasing the duration of life, and the results of the work will show in the small number of deaths in the early periods of life, and the increase in the number of deaths at an advanced age. This calculation is best stated in tables and charts of survivorship. Such tables and charts should illustrate in the population of the State, under sanitary conditions present in the year of calculation, the number of the population living and the number dead at succeeding age periods.

The "Average Age at Death" may be taken appropriately in connection with the duration of life. This factor is determined by adding the ages of the decedents and dividing them by the number of decedents. A short discussion of the real meaning of the average age at death is necessary, in view of the fallacy, especially prevalent among a number of American statisticians, that an increase in the average age at death indicates necessarily a corresponding increase in the duration (expectancy) of life. It is evident that in many American communities such figures would be especially fallacious, as in many communities made up of young adults and children the average age at death will be low, while later, as the older portion of the population becomes numerous, the average age at death will be high, notwithstanding the fact that there may have been no change in the death rate. On the other hand, in a community with a definite, fixed, non-fluctuating population, the average age at death and the expectation of life at birth will be identical; because it is evident that all of such a living population will eventually become dead, and assuming no change in the conditions under which the population is living, and making observations for a sufficient number of years, we can determine the average length of time lived during this period by the deceased persons. It follows that the population living will die in the same proportion and at the same ages as the population dead (assuming the condition to remain constant).

Thus, in 1909, there were 9,762 deaths in the rural districts of Maryland. Of these 9,700 occurred at known ages. Taking the sum of these ages, the 9,700 persons were found to have lived 362,243.959 years, giving an average age at death of 37.10 years. As before stated, this number should be identical with the duration of life in a fixed population; therefore, the term *"presumptive duration of life"* may be applied to this factor in the succeeding table constructed as here described. The table of presumptive duration and presumptive expectancy is constructed as follows:

If we tabulate the decedents dying over the age of 5 years during 1909, we find 6,809 persons to have died after living a total of 359,942.565 years, giving an average age at death of 52.848 years. This figure is entered in the table under the heading, *"Presumptive Duration of Life."* Since this figure includes 5 years which have already been lived, the expectation of those decedent over 5 years will be at the age of 5 years 47.848 years. This factor appears in the table under the heading, *"Presumptive Expectation of Life."*

The factors of this calculation are shown in the first two columns of Table XXII, while in the last two columns, headed, respectively, *"Presumptive Duration"* and *"Presumptive Expectancy,"* are given the presumptive expectation and duration of life by quinquennial age periods.

Methods of Calculation—To determine the total years lived by any number of decedents, the correct method is evidently to add the ages of all the decedents and divide the sum by the number of decedents. This method involves, however, a considerable amount of labor, and vital statisticians generally who make this calculation employ the median age between the two age periods, multiplied by the number of decedents during the same period.

By the aid of one of the standard adding machines it has been possible to take out the age of each individual of the 9,762 decedents of known ages in the rural districts of Maryland and to secure a very accurate result. The ages were returned by years and months, the months being entered as decimal fractions of a year.

All registrations in which the number of days of the age of the decedent was given were returned with an additional month, if over 15 days, and the additional days dropped if under 15 days.

Thus the maximum error of any individual entry was only 0.0416 years. In any large series of entries the error should not exceed 0.001.

The following decimals were used for months, each being carried to the third place: One month, .083; two months, .166; three months, .249; four months, .333; five months, .416; six months, .499; seven months, .583; eight months, .686; nine months, .749; ten months, .833; eleven months, .916; twelve months, 1,000.

By reference to Table XXII, it will be seen that the presumptive duration of life steadily increases from the fifth year upwards, and the presumptive expectancy steadily diminishes.

The presumptive expectancy of life is greatest at 5 years, being greater then than at birth (49.84, as compared with 37.90). The expectancy at 10 and 15 years is also greater than at birth. At birth the expectancy and duration of life are identical.

While the table of presumptive expectation and duration of life is not to be relied upon as an accurate measure of real expectation of life, such as is furnished by actuarial tables, its simplicity of construction and value for purposes of comparison should make its use a necessity in all reports on vital statistics.

The figures over the age of 80 years are only included in the table for the interest they may possess, as they have no value for comparison, owing to the small number of entries and the marked annual fluctuation in deaths over 80.

TABLE XXII.

PRESUMPTIVE EXPECTATAION AND DURATION OF LIFE, MARYLAND—RURAL DISTRICTS, 1909.

Deaths Over the Age of.	Number.	Total Years Lived.	Presumptive Duration (Years).	Presumptive Expectancy at Age.
5 years	6,809	359,942.565	52,848	47.848
10 years	6,589	358,398.299	54.392	44.392
15 years	6,425	356,379.421	55.467	40.467
20 years	6,125	351,158.961	57.168	37.168
25 years	5,710	345,001.285	60.420	35.420
30 eyars	5,355	336,774.724	62.889	32.889
35 years	5,012	326,723.081	65.188	30.188
40 years	4,684	315,676.177	67.565	27.565
45 years	4,405	304,977.239	69.234	24.234
50 years	4,036	287,661.286	71.273	21.273
55 years	3,650	267,417.853	73.265	18.265
60 years	3,213	242,357.681	75.430	15.430
65 years	2,681	203,113.387	75.760	10.760
70 years	2,031	159,257.026	78.416	8.416
75 years	1,320	106,193.768	81.207	6.207
80 years	791	67,576.515	85 431	5.431
85 years	321	27,988.687	87.192	2.192
90 years	105	9,571.498	91.157	1.157
95 years	42	4,037.011	96.119	1.119
100 years	14	1,408 581	100.611	.611
Birth	9,762	362,243.959	37.107	37.107

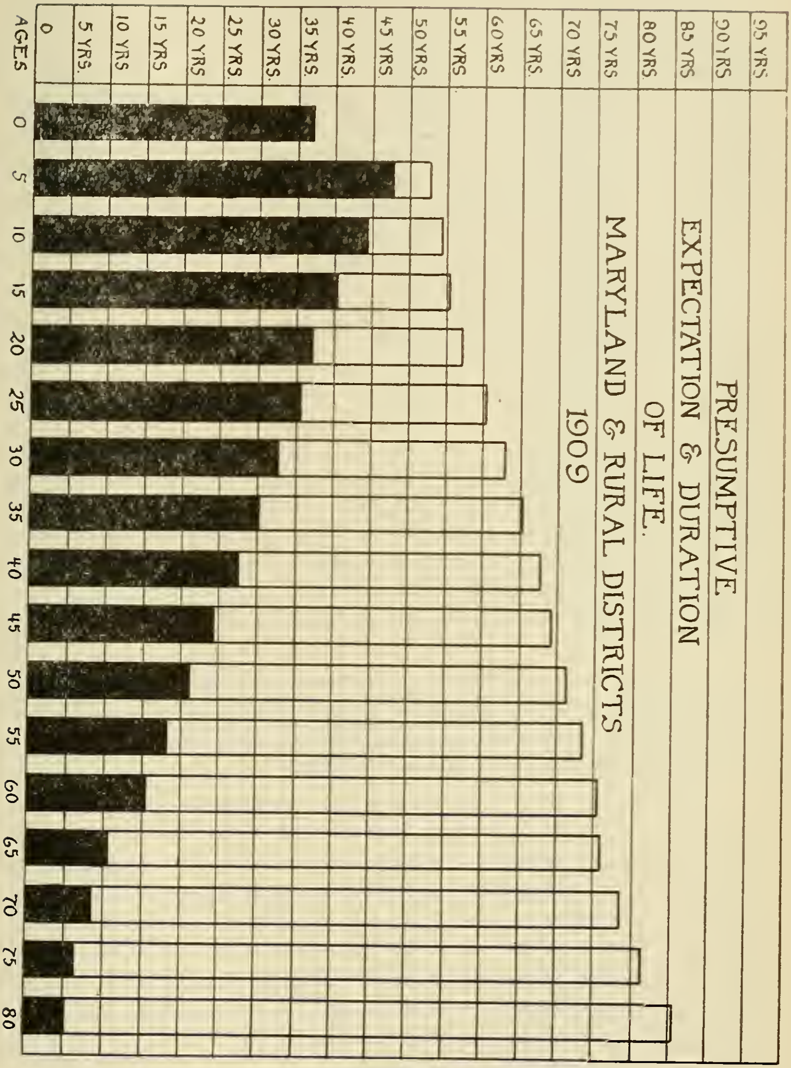

PRESUMPTIVE
EXPECTATION & DURATION
OF LIFE.
MARYLAND & RURAL DISTRICTS
1909
AGES
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
0
5 YRS.
10 YRS
15 YRS
20 YRS
25 YRS.
30 YRS.
35 YRS.
40 YRS.
45 YRS.
50 YRS.
55 YRS
60 YRS
65 YRS.
70 YRS
75 YRS
80 YRS.
85 YRS
90 YRS
95 YRS

CHART 18.

The succeeding tables (Table XXIII and Table XXIV) give the average age of death by counties and by months, respectively.

The county giving the lowest average age at death in 1909 was Anne Arundel (28.730); the highest average of death was in Cecil county (45.628).

In general, the thinly populated rural districts furnished a high average age at death, not only because of their more favorable sanitary condition, but because old persons form a larger part of the population of country districts. The populous districts always contain young people and children in numbers above the mean, and hence give a low average age at death.

An illusively favorable result may occur in some registration districts from defective returns. Unregistered deaths are more common in infants and children than in adults, hence the average age at death for these communities is high.

The next table (Table XXIV) gives the average age at death by months.

The analysis of this table gives very interesting results. The lowest average age at death is in August, the month of greatest mortality and *a fortiori* of infantile mortality. The average age at death in this month is 29.458. The next lowest average age at death is in July. The rise in September is considerable; in November there is about an equal rise until the onset of winter in December, the average at death rising to 40.647. In April the maximum is reached, (43.627).

By reference to the table it will be seen that in the months of February, June, July, August, September and October the average age at death falls below the mean figure (38.473). In all the other months the figures are above the mean.

TABLE XXIII.

Mean Age at Death by Counties, Rural Districts, 1909.

Counties.	Total Deaths.	Total Age of Decedents.	Overage Age at Death.
Allegany	668	24,238.243	36.509
Anne Arundel	701	20,150.290	28.730
Baltimore	1,623	62,740.812	38.040
Calvert	161	5,269.394	38.310
Caroline	282	9,415.869	33.389
Carroll	517	23,343.332	45.153
Cecil	378	17,242.783	45.628
Charles	273	8,674.196	31.762
Dorchester	460	14,738.673	32.040
Frederick	707	30,818.357	43.590
Garrett	126	4,265.649	33.870
Harford	382	17,251.215	45.212
Howard	231	8,894.569	38.378
Kent	298	11,139.414	37.381
Montgomery	326	12,367.939	37.938
Prince George's	486	15,507.893	31.970
Queen Anne's	254	8.918.304	35.091
Somerset	292	10,518.015	35.989
St. Mary's	65	2,384.447	35.142
Talbot	308	11,554.936	37.606
Washington	676	23,438.997	34.673
Wicomico	307	10,021.896	32,644
Worcester	241	9,198.734	38.169
Total	9,762	362,243.959	37.107

TABLE XXIV.

Mean Age at Death by Months—Rural Districts, 1909.

Months.	Total Deaths.	Total Age of Decedents.	Average Age at Death.
January	829	32,790.444	39.542
February	772	29,490.240	38.199
March	910	37,500.311	41.209
April	871	38,015.448	43.622
May	723	29,821.706	41.255
June	787	28,102.729	35.708
July	985	27,965.017	31.670
August	934	27,514.567	29.458
September	712	25,511.849	35.831
October	736	25,588.944	34.699
November	701	27,344.406	39.014
December	802	32,598.298	40.647
Total	9,762	332,243.959	38.473

MARYLAND BIOMETER.

The particular advantages, for sanitary purposes, of tables of survivorship over other forms of life tables have already, in part, been pointed out. If such tables are shown by the graphic method it is important for the sanitarian to note not only changes in the curve as a whole, but at what period such changes occur.

As already stated, life tables of expectancy tend to obscure important eccentricities in the life curve, by reason of compensatory curves occurring later in life.

The biometer is constructed on a table of survivorship, in which 10,000 persons born in a given year are traced throughout life, under the sanitary conditions of the year of computation, as indicated by the mortality returns.

If the death rates for the several age periods are determined for any given year, we may, by applying these rates to the estimated population of this year, construct a table of survivorship showing the number surviving at certain periods thereafter among those born in the given year.

Thus, of 10,000 persons born in Maryland during 1909, we have to determine the number surviving at the end of five years, of ten years, etc., providing the death rate of 1909 remains constant. A chart constructed from this table will indicate the sanitary condition of the State during the year 1909, and described in the manner presently to be mentioned, forms the "Maryland Biometer."

The Maryland biometer is shown in the chart in quinquennial periods for the year 1909, assuming the death rate of that year to remain constant. Instead of considering the whole population as a basis, the scale is reduced to a population of 10,000 for the convenience of comparison with succeeding years. Thus, of a population of 10,000 born in Maryland during 1909, how many will be living and how many dead at the end of 5 years, of 10 years, etc.? This table and chart indicate survivorship and give both the number of living and dead at each quinquennial period after 1909.

Such charts readily admit of comparison with preceding or following years, as variations in the mortality at the various ages appear in the curve in their proper positions, and do not (as in the expectancy tables) merely modify the form of the curve.

The only factors necessary in the construction of this curve are the mortality rates for the several age periods (0-5, 5-10, etc.), which may be applied first to the original population of 10,000, then to the remaining population, after deducting the deaths from 0-5, etc. Applying the death rates obtained from Table XIII to 10,000 persons born in 1909, the survivorship at succeeding quinquennial periods is shown in Table XXVA. In Table XXVB the survivorship with regard to color is shown.

TABLE XXV-A.

SURVIVORSHIP IN MARYLAND, 1909.

Number of Survivors of 10,000 *Persons Born in Maryland in* 1909, *at Succeeding Quinquennial Periods, Assuming the Death Rate of That Year to Remain Constant.*

Number born in 1909	10,000
Number reaching the age of 5 years (A. D. 1914)	8,019
Number reaching the age of 10 years (A. D. 1919)	7,901
Number reaching the age of 15 years (A. D. 1924)	7,811
Number reaching the age of 20 years (A. D. 1929)	7,652
Number reaching the age of 30 years (A. D. 1939)	7,107
Number reaching the age of 40 years (A. D. 1949)	6,495
Number reaching the age of 50 years (A. D. 1959)	5,726
Number reaching the age of 60 years (A. D. 1969)	4,578
Number reaching the age of 70 years (A. D. 1979)	2,754
Number reaching the age of 80 years (A. D. 1989)	524

TABLE XXV-B.

SURVIVORSHIP IN MARYLAND, 1909.

Number of Persons Surviving of 10,000 *Persons Born in Maryland in* 1909 *at Succeeding Quinquennial Periods, Assuming the Death Rate of That Year to Be Constant.*

	White.	Colored
Number born in 1909	10,000	10,000
Number reaching the age of 5 years (A. D. 1914)	8,274	6,949
Number reaching the age of 10 years (A. D. 1919)	8,181	6,746
Number reaching the age of 15 years (A. D. 1924)	8,107	6.605
Number reaching the age of 20 years (A. D. 1929)	7,988	6,217
Number reaching the age of 30 years (A. D. 1939)	7,544	5,465
Number reaching the age of 40 years (A. D. 1949)	6,983	4,737
Number reaching the age of 50 years (A. D. 1959)	6,225	3,931
Number reaching the age of 60 years (A. D. 1969)	5,058	2,997
Number reaching the age of 70 years (A. D. 1979)	2,962	1,926
Number reaching the age of 80 years (A. D. 1989)	328	826

This biometer is graphically shown in Chart No. 19. It is evident that such a chart will indicate the life condition of the State, both in its form and in its area. To calculate the area it is only necessary to measure the length of the perpendiculars to the base line from each component point of the curve, and take the same measurement for the next succeeding point. The area of each trapezoid thus produced may be calculated in the usual manner, by taking the product of one-half the sum of its parallel sides by its altitude. The altitude in this case may be assumed for purposes of comparison to be unity. It is evident that the most favorable curve will be that with the highest and most nearly horizontal crest.

The comparison of the biometers of succeeding years shows a great degree of uniformity. The second biometer, which appears in Chart 20, has been constructed for the purpose of comparing the biometers of the four years, 1906-1909, inclusive. Color is also taken into consideration. The method of construction employed was first to produce a median biometer and to superimpose upon it the curves for the four years mentioned. In order to construct these curves it was necessary to first determine the figures for an estimated median population and the median deaths annually, and from these figures to determine the median annual mortality. The median mortality for the age period can then be determined by mulitplying by five for the quinquennial periods, and by ten for decennial periods; these four columns appear in the accompanying table. No. XXVIa. Table No. XXVIb has especial reference to the estimated white population of the State, while Table No. XXVIc deals in a similar manner with the estimated colored population of the State. The succeeding tables (Table No. XXVII and Table No. XXVIII) give the median survivorship by ages, constructed in the manner already mentioned.

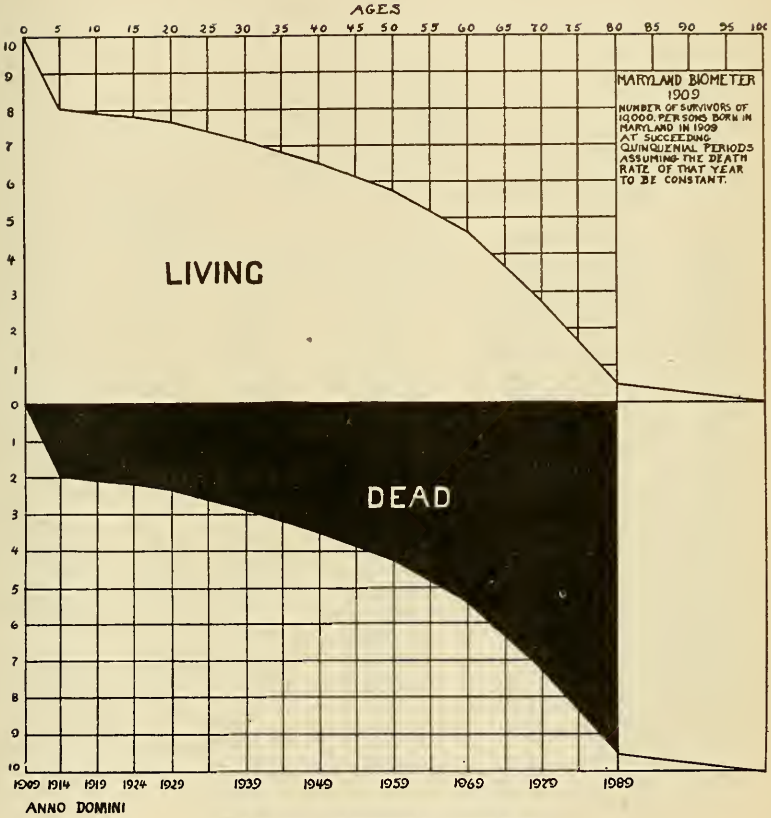


CHART 18—*Maryland Biometer.*

TABLE XXVI-A.

POPULATION AND DEATHS PER THOUSAND AT THE AGE PERIODS FOR THE YEAR 1909.

Ages.	Per Cent.	Estimated Population.	Deaths.	Mortality Per 1,000 of Those Living.	Mortality for Age Period.
0 to 5.......	11.30	151,127	5,998	39.68	198.10
5 to 10.......	11.16	149,186	442	2.96	14.80
10 to 15.......	10.66	142,462	326	2.28	11.40
15 to 20.......	10.13	135,379	552	4.07	20.35
20 to 25.......	9.06	121,079	1,680	7.12	71.20
25 to 30.......	8.52	114,664			
30 to 35.......	7.17	95,821	1,597	8.62	86.20
35 to 40.......	6.68	89,273			
40 to 45.......	5.80	77,512	1,710	12.15	121.50
45 to 50.......	4.73	63,212			
50 to 55.......	4.07	54,392	1,928	20.14	201.40
55 to 60.......	3.09	41,294			
60 to 65.......	5.27	34,345	2,357	40.53	405.30
65 to 70.......	1.80	24,056			
70 to 75.......	1.23	16,458	2,232	82.60	826.00
75 to 80.......	0.79	10,557			
80 to 85.......	0.33	4.409	1,314	203.40	2,034.00
85 to 90.......	0.11	1,467			
90 to 95.......	0.33	400			
95 to 100......	0.00	120			
100 and over....	0.00	59			

TABLE XXVI-B.

WHITE POPULATION AND DEATHS *PER* THOUSAND AT THE *AGE* PERIODS FOR THE YEAR 1909.

Maryland's Estimated White Population, 1,071,247.

Ages.	Per Cent.	Estimated White Population.	Deaths.	Mortality Per 1,000 Annually.	Mortality Per 1,000 for Age Periods.
0 to 5.......	11.38	121,829	4,210	34.55	172.75
5 to 10.......	11.22	120,202	272	2.26	11.30
10 to 15.......	10.67	114,304	208	1.81	9.05
15 to 20.......	10.13	108,620	319	2.93	14.65
20 to 25.......	9.06	97,158	1,052	5.56	55.60
25 to 30.......	8.03	92,002			
30 to 35.......	7.17	76,879	1,110	7.47	74.70
35 to 40.......	6.68	71,624			
40 to 45.......	5.80	62,189	1,235	10.94	109.40
45 to 50.......	4.72	50,666			
50 to 55.......	4.07	43,639	1,461	18.77	187.70
55 to 60.......	3.09	33,131			
60 to 65.......	2.57	27,557	1,941	41.42	414.20
65 to 70.......	1.80	19,304			
70 to 75.......	1.23	13,188	1,927	89.00	890.00
75 to 80.......	0.79	8,470			
80 to 85.......	0.33	3,538	1,130	216.21	2,162.10
85 to 90.......	0.11	1,179			
90 to 95.......	0.03	322			
95 to 100......	0.00	95			
100 and over....	0.00	48			

TABLE XXVI-c.

COLORED POPULATION AND DEATHS PER THOUSAND AT THE AGE PERIODS FOR THE YEAR 1909.

Maryland's Estimated Colored Population, 265,055.

Ages.	Per Cent.	Estimated Colored Population.	Deaths.	Mortality Per 1,000 Annually.	Mortality Per 1,000 for Age Periods.
0 to 5.......	11.05	29,298	1,788	61.02	305.10
5 to 10.......	10.93	28,984	170	5.86	29.30
10 to 15.......	10.62	28,158	118	4.10	20.95
15 to 20.......	10.09	26,759	233	8.71	43.55
20 to 25.......	9.02	23,921	628	13.48	134.80
25 to 30.......	8.54	22,662			
30 to 35.......	7.14	18,942	487	13.30	133.00
35 to 40.......	6.65	17,649			
40 to 45.......	5.53	15,323	475	17.04	170.40
45 to 50.......	4.73	12,546			
50 to 55.......	4.43	11,753	468	23.50	235.00
55 to 60.......	3.07	8,163			
60 to 65.......	2.56	6,788	416	36.04	360.40
65 to 70.......	1.41	4,752			
70 to 75.......	1.23	3,270	305	57.00	570.00
75 to 80.......	0.78	2,087			
80 to 85.......	0.32	871	184	145.88	1,458.80
85 to 90.......	0.11	290			
90 to 95.......	0.02	78			
95 to 100......	0.00	25			
100 and over....	0.00	12			

TABLE XXVII.

		Estimated Population of Maryland.						Deaths by Ages.						Death Rate Per 1,000 Known Ages.					
Years.	Cent.	1904	1905	1906.	1907	1908	1909	1904	1905	1906	1907	1908	1909	1904	1905	1906	1907	1908	1909
0- 5..	11.30	142,211	144,806	145,976	147,311	149,264	151,127	5,896	6,074	6,127	6,541	5,802	5,998	41.46	42.15	41.97	44.40	38.87	39.68
5-10..	11.16	133,448	142,184	144,048	145,366	147,285	149,186	525	402	501	442	486	442	3.74	2.83	3.48	3.04	3.23	2.96
10-15..	10.66	140,332	135,207	136,981	138,234	140,611	142,462	356	339	384	330	336	326	2.67	2.51	2.83	2.39	2.38	2.28
15-20..	10.13	126,818	128,485	130,171	131,361	133,620	135,379	694	619	615	618	628	552	5.47	4.83	4.73	4.70	4.69	4.07
20-25..	9.06	113,416	114,924	116,431	117,486	119,506	121,079	1,753	1,675	1,677	1,793	1,679	1,680	7.94	7.48	7.39	7.83	7.21	7.12
25-30..	8.52	407,409	108,826	110,253	111,271	113,175	114,664												
30-35..	7.17	89,757	90,992	92,135	92,977	94,576	95,821	1,656	1,574	1,594	1,749	1,613	1,597	9.55	9.08	8.96	9.73	8.28	8.62
35-40..	6.68	83,623	84,727	85,838	86,623	88,113	89,273												
40-45..	5.80	72,607	73,565	74,530	75,212	75,505	77,512	1,679	1,604	1,780	1,772	1,714	1,710	12.74	12.16	19.99	12.99	12.34	12.15
45-50..	4.73	59,213	59,994	60,780	61,336	62,391	63,212												
50-55..	4.07	50,955	51,622	52,300	52,778	53,685	54,392	1,899	1,750	1,870	1,904	1,983	1,928	21.48	19.53	20.33	20.51	20.99	20.14
55-60..	3.09	38,682	39,192	39,707	40,007	40,758	41,294												
60-65..	2.57	32,173	32,597	33,025	33,327	33,899	34,345	2,309	2,203	2,172	2,485	2,437	2,357	42.21	40.27	38.67	43.85	42.45	40.53
65-70..	1.80	22,533	22,831	23,130	23,342	23,743	24,056												
70-75..	1.23	15,397	15,601	15,806	15,950	16,224	16,458	2,246	2,010	2,158	2,287	2,272	2,232	88.82	79.49	83.13	87.31	91.46	82.60
75-80..	0.79	9,890	10,002	10,152	10,244	10,420	10,557												
80 & over	0.77	6,087	6,169	6,216	6,270	6,373	6,455	1,249	1,178	1,232	1,349	1,276	1,314	205.19	190.63	199.06	215.15	210.21	203.40

TABLE XXVIII.

SURVIVORSHIP BY AGES—1903, 1904, 1905, 1906, 1907, 1908, 1909.

10,000 Born in................	1903	1904	1905	1906	1907	1908	1909
Number reaching 5 years....	8.011	7,927	7,892	7,901	7,780	8,056	8.019
Number reaching 10 years....	7,866	7,779	7,780	7,771	7,662	7.926	7.901
Number reaching 15 years....	7,742	7,675	7,682	7,661	7.570	7,832	7,811
Number reaching 20 years....	7,552	7,465	7.546	7.480	7,392	7,646	7.652
Number reaching 30 years....	6,996	6,872	6,982	6,927	6,813	7,095	7.107
Number reaching 40 years....	6,394	6,216	6,348	6,306	6,150	6,408	6,495
Number reaching 50 years....	5,644	5,424	5,676	5,045	5,351	5,619	5,726
Number reaching 60 years....	4,572	4,275	4,567	4,019	4,254	4,440	4,578
Number reaching 70 years....	2,844	2,471	2,728	2,465	2,389	2,556	2,754
Number reaching 80 years....	626	276	560	416	313	218	524

TABLE XXIX.

DEATHS BY MONTHS AND COLOR IN MARYLAND, 1909.

	White.	Colored.	Total.
January	1,276	428	1,704
February	1,109	420	1,529
March	1,399	495	1,894
April	1,357	501	1,857
May	1,125	427	1,552
June	1,111	435	1,546
July	1,428	545	1,973
August	1,419	425	1,844
September	1,111	409	1,520
October	1,164	407	1,571
November	1,104	369	1,473
December	1,241	434	1,675
Total	14,843	5,295	20,138

MORBIDITY STATISTICS, 1909.

The following paragraphs constitute the editorial foreword to that section of the annual report entitled "Mortality and Morbidity Statistics, 1909: A Summary." These statistics contain a reasonably clear and concise statement of the prevalence of communicable diseases in the counties of Maryland for the calendar year 1909.

The figures, originally gleaned from the "Health Officers' Bulletin," correspond very closely to those of the previous year (1908). In 1908 the total number of deaths reported from communicable diseases was 2,136; in 1909 this number fell to 2,075. The following is a detailed statement arranged in order of numerical importance:

Tuberculosis	1,118
Typhoid fever	294
Influenza	179
Whooping-cough	118
Meningitis	94
Diphtheria	89
Measles	79
Septicemia	42
Scarlet fever	21
Malaria	19
Erysipelas	17
Chickenpox	3
Pellagra	1
Ophthalmia neonatorum	1

The total number of deaths in the counties of Maryland, year 1909, was 10,230. No deaths resulted from mumps, smallpox, German measles. No cases of infantile paralysis were reported in the year 1909, but 2 deaths are recorded as resulting from this disease.

The total number of cases of sickness from communicable diseases reported in 1908 was 5,876; in 1909, 6,475. These figures indicate that better returns of infectious disease reports are being secured year by year. The infectious disease returns for the year 1909 will next be summarized in the order of their numerical importance:

Measles	2,471
Typhoid fever	1,977
Diphtheria	614
Scarlet fever	588
Whooping-cough	355
Chickenpox	229
Mumps	91
Impetigo contagiosa	58
German measles	21
Influenza	21
Erysipelas	18
Smallpox	16
Meningitis	6
Malaria	5
Septicemia	3
Catarrhal conjunctivitis	2

The tuberculosis figures (morbidity) have been separately compiled, and hence do not appear in the above summary. To recapitulate: The total number of deaths in rural Maryland for the year 1909 was 10,230. Of this number there resulted from infectious diseases 2,075. Tuberculosis caused the largest number of deaths from any one infectious disease (1,118); typhoid fever, with 294 deaths, stands second; and influenza, with 179 deaths, stands third. The latter disease was especially fatal in the very aged and in the very young.

A total of 6,475 cases of sickness from contagious and infectious diseases was reported in the counties of Maryland (Baltimore City not included) for the year 1909. Measles, typhoid fever, diphtheria, scarlet fever, whooping-cough and chickenpox were the prevailing epidemics.

A monthly summary of the deaths from infectious diseases, together with the number of cases of sickness reported, will subsequently be given. Any one desiring specific information regarding the prevalence of any infectious disease in the counties of Maryland is especially referred to the section on the disease in question.

INTRODUCTORY REMARKS, 1909.

January—A total of 5,876 cases of contagious and infectious diseases was reported between January 1 and December 31, 1908. The total number of deaths in 1908 from infectious and communicable diseases was 2,136. Of this number, one-half, or 1,069, were due to tuberculosis. Conspicuous on the contagious and infectious disease roster for 1908 are 33 cases of smallpox.

During the year 1908 the tuberculosis problem was agitated as it never had been before. The epoch-making work done by the International Congress on Tuberculosis held at Washington, D. C., September 21 to October 12, 1908, stands unparalleled in the annals of preventive medicine. The astounding success of this Congress was largely due to the untiring efforts of its Secretary-General, Dr. John S. Fulton, of Baltimore, formerly Secretary to the State Board of Health of Maryland.

Foremost in the rank and file of States and municipalities represented at the International Congress on Tuberculosis were the State of Maryland and the City of Baltimore, these having been awarded three of the prizes. Maryland was the pioneer State in the framing of definite laws for the statutory control of tuberculosis. Other States have since followed in its wake, some of them copying the Maryland Code almost *verbatim et literatim et punctatim*.

The inception of this work—the prevention and relief of tuberculosis—dates from the discovery of the tubercle bacillus by Dr. Robert Koch, of Berlin. When Professor Koch, in 1882, announced that he had at last cornered the tuberculosis germ, he "fired the shot heard round the world" in the prophylaxis of tuberculosis. Diffusion of a knowledge of the germ origin of this disease was the first practical step toward its suppression.

In the year 1908 there was a total of 2,359 deaths from tuberculosis in Maryland, distributed as follows: Baltimore City, 1,290 deaths; the counties in Maryland (the entire State, exclusive of Baltimore City), 1,069 deaths. The month of greatest mortality was: Baltimore City, January, 131 deaths; in the counties, February, 112 deaths. The month of least mortality was: Baltimore City, September, 81 deaths; in the counties, November, 64 deaths.

In the State of Maryland the crusade against tuberculosis has been conducted conjointly by the State Board of Health, the Baltimore City Health Department and the Maryland Association for the Prevention and Relief of Tuberculosis. Inspired by the hearty co-operation and under the brilliant leadership of such men as His Excellency Governor Crothers, himself a zealous advocate of "good health, good roads, good citizenship and good government," and His Honor Mayor Mahool, "the prince of civic rulers," these organizations are accomplishing much, and the future promises still greater things. Both Governor Crothers and Mayor Mahool deserve the entire respect and confidence of every resident in the State and in the City for their perennial interest in matters relating to public health, hygiene and sanitation.

Measles is on the increase; likewise, influenza. The same can be said of chickenpox. Tuberculosis, typhoid fever, scarlet fever and whooping-cough remain practically stationary in numbers. Dr. Frank H. Ruhl, Health Officer, Lansdowne, Baltimore county, reports "about 50 cases of impetigo contagiosa at the Westport school. All improving. School opened." Dr. Luther Kemp, Health Officer, Uniontown, Carroll county, writes: "Scabies is prevalent in

Frizzelsburg section. Have one family four or five of whom have had trouble for some five or six weeks." For the first time, a death from ophthalmia neonatorum is recorded in this issue of the Bulletin.

February—Only one of the acute exanthematous diseases was epidemic during the month of February, namely, measles. Measles prevailed extensively in Baltimore, Cecil, Harford and Washington counties. Compared with the preceding month, typhoid fever, scarlet fever, whooping-cough, diphtheria and mumps show a gratifying decline in the number of cases of sickness. With the exception of scarlet fever, the same is true for the mortality returns. Influenza, chickenpox and German measles remain stationary in point of numbers. Dr. E. W. Heyde, Health Officer, reports "a number of cases of impetigo and a few of pemphigus in Parkton, Baltimore county."

March—Measles is still widely epidemic in several sections of the State, notably in Washington county. There has been a very perceptible increase in the number of cases of scarlet fever and of whooping cough. The number of deaths from influenza has risen 50%. The latter part of the month a case of smallpox appeared at the House of Correction, the first to occur in 1909 in Maryland. Secondary cases of smallpox have resulted, which will be included in the April Bulletin. Dr. Ira J. McCurdy, Health Officer, reports "la grippe quite prevalent in Frederick county." Dr. Charles Farquhar, Health Officer, states "there has been quite a number of cases of influenza in our district of Olney, Montgomery county."

April—The epidemic of measles is subsiding. The cases of scarlet fever, of whooping cough and of influenza are decreasing in number. Typhoid fever and diphtheria statistics, as well as the minor infectious diseases, remain practically the same as for the month of March. Eight additional cases of smallpox were reported. Catarrhal conjunctivitis, the first for a twelvemonth, has appeared in epidemic form in the Fifth district of Cecil county.

The tuberculosis figures are still comparatively high—a heritage of the wide prevalence of grippal conditions, many chronic tuberculous persons being carried off by an acute attack of la grippe. Dr. Luther Kemp, Health Officer, reports "three cases of scabies in one family, Pleasant Valley, Carroll county."

The fullness of time has come for instituting a campaign against typhoid fever and other summer diseases. The boiling or filtration of drinking water, the pasteurization of milk and the thorough washing of raw fruits and vegetables are valuable safeguards in the prevention of typhoid fever. Protection against flies and other insects is also important. The avoidance of all vegetables fertilized by the use of so-called "night soil," which is nothing more nor less than human excrement, is another necessary and wise precaution.

"Regulations Governing the Use of Night Soil for Fertilizing Growing Vegetables," as well as brochure, "Typhoid Fever: How to Prevent Its Spread," both issued by the State Board of Health, should be in the hands of every householder.

May—Health Officers are reminded that typhoid fever may be expected to begin its regular summer rise about the end of June. The bulk of the summer typhoid is still due in Maryland in the majority of instances to polluted water.

Prompt action on the part of the Health Officer will prevent a large amount of unnecessary sickness and deaths.

The investigation of all public water supplies and as many private supplies as possible during the early summer months is recommended.

The investigation of water supplies includes, first, the analysis of samples of drinking water; second, careful investigation of the water system, and especially sanitary surveys of the watersheds or catchment basins.

For the former purpose chemical water blanks and bacteriological water boxes will be furnished Health Officers upon request. The State Board of Health will also take up the systematic investigation of water supplies upon request of Health Officers or town or county authorities.

It is recommended that samples from public water supplies classed as "good" should be taken at least twice yearly, irrespective of season, while water supplies classed as "bad" or "suspicious" should be subjected to analysis once monthly, or at more frequent intervals.

Health Officers are recommended to consult carefully the list of "cases occurring on watersheds" appearing in each monthly bulletin. The Health Officer in whose jurisdiction such a threatened water supply exists should make every effort to see, first, that the discharge of such patients are properly disinfected at the bedside; second, that such discharges are not deposited where they will be carried by rain into the public water supply.

The following method of disinfecting the evacuations from the bowels is recommeuded by Dr. M. J. Rosenau, and is approved by the State Board of Health.

The evacuations from the bowels should be received in a vessel containing a 5 per cent. solution of carbolic acid, 2 per cent. tricresol, or 5 per cent. formalin. More of the solution must be added afterward, so that it is present in equal volume and thoroughly incorporated throughout the mass. The mixture should stand one hour before it is disposed of. Bichloride of mercury is not suitable for destruction of the infection in the dejecta, on account of its property of coagulating and combining with the albuminous matter, which prevents its penetration. Lime and its various compounds are cheap and efficient disinfectants for this purpose. As officially prescribed in the army or the United States, it is prepared by the addition of 1 per cent. by weight of the freshly slaked lime to 8 parts of water.

In its application to fecal matter the milk of lime is employed in the proportion of 5 per cent. by bulk, with a daily addition equal to 10 per cent. by bulk, of the estimated increment of feces.

The urine frequently contains the infective agent of the disease, and is usually disinfected with the evacuations from the bowel. If passed separately it may be disinfected by adding sufficient bichloride of mercury to make a 1:1000 solution, or carbolic acid 3 to 5 per cent., tricresol 1 per cent., or formalin 3 to 5 per cent., and allowed to stand one hour before it is discarded.

June—Measles prevailed pretty extensively at Haight, Carroll county. Sixty-four cases were reported from this section through Dr. M. D. Norris, Health Officer, Fifth district. Compared with the month of May, the number of cases of typhoid fever reported has just been doubled. Dr. W. E. McClanahan, Health Officer, Twelfth district, Baltimore county, reports "cholera infantum, complicated by meningeal symptoms, prevalent in Highlandtown.

July—With the glaring exception of typhoid fever, no epidemic prevailed in the State during the month of July. Compared with the figures for June, the number of cases of typhoid fever has been sextupled. In July, 1908, the corresponding month of last year, 215 cases of typhoid fever were reported, as compared with 358 in the present month (July, 1909).

Of the six epidemic centers, Chestertown, Kent county, stands at the head. The latter outbreak was directly traced to an infected water supply. This fact should indelibly impress upon the people of the State that it is important to drink boiled water when typhoid fever is present in a community.

Typhoid fever is a country· disease par excellence. This is largely due to the almost universal use of surface closets and other careless methods of disposal of human excrement upon the surface of the earth. The infectious material enters and pollutes the water supply, or is carried by flies to articles of food.

August—With the exception of typhoid fever, no infectious diseases prevailed to any extent during the month of August, 1909. A total of 401 cases was reported. In addition, the deaths from typhoid fever numbered 42. The disease was most rife in Elkridge, Howard county (21 cases).

The tuberculosis figures (80 deaths) are gratifyingly low. The high mortality from tuberculosis during the preceding two months was indirectly due to post-influenzal complications and sequeale.

A death from pellagra, the first recorded in the State of Maryland, occurred at the Baltimore City (now Mercy) Hospital, August 20. The patient was a white woman who had been a lifelong resident of Charles county. Three days later a boy from Washington county died of paralytic rabies, in the same institution.

For a period of three months no deaths have resulted from scarlet fever. Contemporaneously with the opening of the public schools in September. Health Officers may expect the acute infectious diseases — scarlet fever, measles, diphtheria, etc. — to increase in numbers.

September—The deaths from tuberculosis during the month of September numbered 54. This is the smallest number from tuberculosis recorded for any month since 1902. In December, 1907. a similar number (54) of deaths resulted from tuberculosis. In November, 1908, the next lowest number (64) of deaths occurred from tuberculosis. In June, 1907, 67 persons died of tuberculosis; and in November, 1907, there were 69 deaths from this cause.

The mortality from typhoid fever is still high (52 deaths). The number of cases of sickness reported has risen from 401 in August to 432 during the present month (September). In September there have been seven epidemic centers of typhoid fever.

Scarlet fever, measles, whooping-cough and diphtheria each show an increase over the returns for the preceding month. Four cases of malaria were reported, an unusual thing for the State of Maryland in these latter days.

October—The deaths from tuberculosis during the month of October numbered 64, as for the month of November, 1908. In September, 54 persons died of tuberculosis, as in December, 1907. This (54) is the lowest number of deaths from tuberculosis for any month since 1902.

There were 49 deaths from typhoid fever during the month. The number of typhoid fever cases reported has fallen to 291, as compared with 432 in September. Diphtheria and measles show an increase over the returns of the preceding month. Three cases of smallpox were reported—one in Baltimore county and two in Charles county.

November—Typhoid fever, measles, scarlet fever and diphtheria are the specific infectious diseases most widely prevalent during the month of November, 1909. Measles is epidemic in Kent county; scarlet fever at Betterton, in Kent county, and at Kensington, in Montgomery county.

Dr. H. A. Mitchell, Health Officer of Cecil county, reports that "sore throat, resembling follecular tonsillitis, is epidemic through the Third district, including Elkton."

A death from pellagra, the second death and the fourth case of the disease reported in Maryland, occurred on the 26th inst.

December—No epidemic of any magnitude prevailed in the State during December, 1909. The number of deaths from typhoid fever has decreased from 40 to 17, and the number of cases of sickness has fallen from 178 to 83. The number of cases of scarlet fever, of measles and of diphtheria has also very materially decreased as compared with the number of cases of these diseases reported in November. On the other hand, chickenpox and whooping-cough show an increase in the number of cases reported.

Four cases of smallpox occurred in Cambridge, Dorchester county, all colored—3 males and 1 female. This makes a total of 16 cases of smallpox occurring in the State during the year 1909.

MORBIDITY STATEMENT.

January—Of the cases of contagious and infectious diseases reported in January, 1909: Typhoid fever, 72 cases; scarlet fever, 96 cases; measles, 195 cases; whooping-cough, 32 cases; diphtheria, 72 cases; chickenpox. 47 cases; mumps, 18 cases; German measles, 3 cases; meningitis, 2 cases, and impetigo contagiosa, 54 cases; total, 581 cases.

February—Of the cases of contagious and infectious diseases reported in February, 1909: Typhoid fever, 21 cases; scarlet fever, 49 cases; measles, 472 cases; whooping-cough, 8 cases; influenza, 3 cases; diphtheria, 46 cases; mumps, 12 cases; chickenpox, 45 cases; German measles, 5 cases; impetigo contagiosa, 4 cases, and septicemia, 2 cases; total, 667 cases.

March—Of the cases of contagious and infectious diseases reported in March, 1909: Typhoid fever, 25 cases; scarlet fever, 70 cases; measles, 463 cases; whooping-cough, 100 cases; diphtheria, 40 cases; chickenpox, 21 cases; mumps, 24 cases; erysipelas, 2 cases, and smallpox, 1 case; total, 746 cases.

April—Of the cases of contagious and infectious diseases reported in April, 1909; Typhoid fever, 25 cases; scarlet fever, 27 cases; whooping-cough, 2 cases; measles, 332 cases; diphtheria, 43 cases; influenza, 13 cases; mumps, 16 cases; chickenpox, 11 cases; smallpox, 8 cases; German measles, 2 cases; erysipelas, 2 cases, and infectious conjunctivitis, 2 cases; total, 483 cases.

May—Of the cases of contagious and infectious diseases reported in May, 1909: Typhoid fever, 31 cases; scarlet fever, 14 cases; measles, 271 cases; whooping-cough, 38 cases; diphtheria, 23 cases;

mumps, 8 cases; chickenpox, 5 cases; influenza, 4 cases, and erysipelas, 1 case; total, 395 cases.

June—Of the cases of contagious and infectious diseases reported in June, 1909: Typhoid fever, 62 cases; scarlet fever, 22 cases; diphtheria, 20 cases; whooping-cough, 22 cases; measles, 196 cases; influenza, 1 case; chickenpox, 5 cases; mumps, 8 cases; erysipelas, 4 cases; septicemia, 1 case, and meningitis, 1 case; total, 342 cases.

July—Of the cases of contagious and infectious diseases reported in July, 1909: Typhoid fever, 358 cases; scarlet fever, 23 cases; diphtheria, 22 cases; whooping-cough, 31 cases; measles, 128 cases; chickenpox, 2 cases; mumps, 2 cases; erysipelas, 2 cases; German measles, 1 case, and meningitis, 2 cases; total, 571 cases.

August—Of the cases of contagious and infectious diseases reported in August, 1909: Typhoid fever, 40 cases; scarlet fever, 23 cases; diphtheria, 36 cases; whooping-cough, 24 cases; measles, 28 cases; chickenpox, 27 cases; erysipelas, 1 case, and German measles, 3 cases; total, 543 cases.

September—Of the cases of contagious and infectious diseases reported in September, 1909: Typhoid fever,. 432 cases; scarlet fever, 42 cases; diphtheria, 45 cases; whooping-cough, 35 cases; measles, 37 cases; chickenpox, 3 cases; malaria, 4 cases; German measles, 3 cases, and mumps, 2 cases; total, 603 cases.

October—Of the cases of contagious and infectious diseases reported in October, 1909: Typhoid fever, 291 cases; scarlet fever, 56 cases; diphtheria, 106 cases; whooping-cough, 21 cases; measles, 120 cases; chickenpox, 7 cases; smallpox, 3 cases; malaria, 1 case; German measles, 3 cases; mumps, 1 case, and erysipelas, 2 cases; total, 611 cases.

November—Of the cases of contagious and infectious diseases reported in November, 1909: Typhoid fever, 178 cases; scarlet fever, 101 cases; diphtheria, 101 cases; whooping cough, 13 cases; measles, 134 cases; chickenpox, 17 cases; German measles, 1 case; erysipelas, 4 cases; meningitis, 1 case; total, 550 cases.

December—Of the cases of contagious and infectious diseases reported in December, 1909: Typhoid fever, 83 cases; scarlet fever, 62 cases; diphtheria, 61 cases; whooping-cough, 39 cases; measles, 98 cases; chickenpox, 46 cases; German measles, 2 cases; smallpox, 4 cases, and mumps, 1 case; total, 396 cases.

MORTALITY STATEMENT.

January—Total deaths, all causes, January, 1909, 875, as follows: Infectious and communicable diseases, 174; general and non-communicable diseases and accidents, 701. Of the 174 deaths caused by infectious and communicable diseases, 102 resulted from tuberculosis, 12 from typhoid fever, 1 from scarlet fever, 21 from influenza, 12 from measles, 13 from diphtheria, 6 from whooping-cough, 2 from meningitis, 3 from septicemia, 1 from erysipelas and 1 from ophthalmia neonatorum. One hundred and twenty-four were white and 50 colored; 90 were males and 84 were females. Of the 701 deaths due to general and non-communicable diseases and accidents, 511 were white and 190 colored; 375 were males, 324 were females, and in two instances the sex was not stated.

February—Total deaths, all causes, February, 1909, 815, as follows: Infectious and communicable diseases, 170; general and non-communicable diseases and accidents, 645. Of the 170 deaths caused by infectious and communicable diseases, 99 resulted from tuberculosis, 9 from typhoid fever, 4 from scarlet fever, 19 from influenza, 12 from measles, 6 from diphtheria, 3 from whooping-cough, 13 from meningitis, 3 from septicemia and 3 from malaria. (The grand total is 171, because one name appears in both measles and tuberculosis.) One hundred and six were white and 64 colored; 90 were males and 80 females. Of the 645 deaths due to general and non-communicable diseases and accidents, 456 were white and 189 colored; 352 were males, 291 were females, and in two instances the sex was not stated.

March—Total deaths, all causes, March, 1909, 936, as follows: infectious and communicable diseases, 207; general and non-communicable diseases and accidents, 729. Of the 207 deaths caused by infectious and communicable diseases, 111 resulted from tuberculosis, 8 from typhoid fever, 11 from diphtheria, 42 from influenza, 1 from chickenpox, 1 from erysipelas, 12 from meningitis, 3 from septicemia and 1 from malaria. (The grand total is 209, but two names appear twice.) One hundred and thirty-nine were white and 68 colored; 98 were males and 109 females. Of the 729 deaths due to general and non-communicable diseases and accidents, 544 were white and 185 colored; 397 were males and 332 were females.

April—Total deaths, all causes, April, 1909, 908, as follows: Infectious and communicable diseases, 206 (plus 7 delinquent deaths in Garrett county, making a grand total of 213); general and non-communicable diseases and accidents, 702. Of the 213 deaths caused by infectious and communicable diseases, 109 resulted from tuberculosis, 10 from typhoid fever, 14 from measles, 5 from whooping-cough, 5 from scarlet fever, 8 from diphtheria, 46 from influenza, 7 from meningitis, 1 from chickenpox, 2 from erysipelas, 5 from septicemia and 1 from malaria. One hundred and forty-three were white, 69 colored, and in one instance the color is not stated. One hundred and seven were males and 106 females. Of the 702 deaths due to general and non-communicable diseases and accidents, 492 were white, 208 colored, and in two instances the color is not stated; 371 were males, 329 females, and in two instances the sex is not stated.

Fifty delinquent death certificates have been received from Garrett county, 21 for 1908 and 29 in 1909. Seven of these fifty deaths were caused by infectious and communicable diseases, and have been included in the present issue of the Bulletin. The remaining 43 deaths have not been included at all in the vital statistics returns.

Only one of the 21 delinquent deaths in 1908 was caused by an infectious disease. The remaining 20 were distributed, as follows: July, 1 death; August, 2 deaths; September, 3 deaths; October, 4 deaths; November, 5 deaths; December, 5 deaths.

Six of the 29 delinquent deaths in 1909 were caused by infectious diseases. The remaining 23 were distributed, as follows: January, 5 deaths, all white, 4 males and 1 female; February, 9 deaths, all white, 5 males and 4 females; March, 9 deaths, all white, 5 males and 4 females.

May—Total deaths, all causes, May, 1909, 739, as follows: Infectious and communicable diseases, 169; general and non-communicable diseases and accidents, 570. Of the 169 deaths caused by infectious and communicable diseases, 98 resulted from tuberculosis, 8 from typhoid fever, 9 from measles, 2 from scarlet fever, 4 from diphtheria, 18 from influenza, 16 from whooping-cough, 2 from malaria, 5 from meningitis, 6 from septicemia and 1 from chicken-pox. Ninety-two were white, 75 colored, and in two instances the color is not stated; 92 were males and 77 females.

Of the 570 deaths due to general and non-communicable diseases and accidents, 399 were white, 170 colored, and in one instance the color is not stated; 300 were males and 270 females.

June—Total deaths, all causes, June, 1909, 876, as follows: Infectious and communicable diseases, 155 (plus 5 culled from belated death returns, making a total of 160); general and non-communicable diseases and accidents, 721.

Of the 160 deaths caused by infectious and communicable diseases, 104 resulted from tuberculosis, 11 from typhoid fever, 7 from measles, 3 from diphtheria, 12 from whooping-cough, 10 from influenza, 1 from meningitis, 1 from septicemia, 3 from erysipelas and 2 from malaria. One hundred and five were white and 55 colored; 76 were males and 84 females.

Of the 721 deaths due to general and non-communicable diseases and accidents, 523 were white and 198 colored; 380 were males, 340 females, and in one instance the sex is not stated.

These include 23 death cards from Cumberland. Nineteen of these deaths were due to general and non-communicable diseases and accidents, and 4 to infectious diseases. These latter 4 were all white, 1 male and 3 females, and have been included in the present issue of the Bulletin.

Of the other 19 deaths, 15 were white and 4 colored; 10 were males and 9 females. These 19 deaths have not been included in any enumeration whatsoever.

July—Total deaths, all causes, July, 1909, 920, as follows: Infectious and communicable diseases, 164 (plus 15 culled from belated death returns, making a total of 179; general and non-communicable diseases and accidents, 756.

Of the 179 deaths caused by infectious and communicable diseases, 118 resulted from tuberculosis, 30 from typhoid fever, 2 from measles, 3 from diphtheria, 10 from whooping-cough, 4 from influenza, 10 from meningitis, 5 from septicemia, 1 from erysipelas and 1 from malaria. One hundred and five were white and 74 colored; 84 were males and 95 females.

Of the 756 deaths due to general and non-communicable diseases and accidents, 540 were white, 213 colored, and in three instances the color is not stated; 401 were males and 355 were females.

These include 77 death cards from Anne Arundel county and 11 from Garrett county. Seventy of these deaths were due to general and non-communicable diseases and accidents and 18 to infectious diseases. Of these latter 18, 15 have been included in the present issue of the Bulletin. Of the former 70 deaths, 51 were white and 19 colored; 34 were males and 36 females. These 70 deaths have not been included in any enumeration whatsoever.

August—Total deaths, all causes, August, 1909, 977, as follows: Infectious and communicable diseases, 163 (plus 4 culled from belated returns, making a total of 167); general and non-communicable diseases and accidents, 814.

Of the 167 deaths caused by infectious and communicable diseases, 80 resulted from tuberculosis, 48 from typhoid fever, 2 from measles, 2 from diphtheria, 18 from whooping-cough, 2 from influenza, 12 from meningitis, 1 from septicemia, 1 from erysipelas and 1 from malaria. One hundred and twelve were white, 54 colored, and in one instance the color is not stated; 84 were males and 83 females.

Of the 814 deaths due to general and non-communicable diseases and accidents, 628 were white, 183 colored, and in three instances the color is not stated; 430 were males, 382 were females, and in two instances the sex is not given.

September—Total deaths, all causes, September, 1909, 752, as follows: Infectious and communicable diseases, 144 (plus 3 culled from belated returns, making a total of 147); general and non-communicable diseases and accidents, 608.

Of the 147 deaths caused by infectious and communicable diseases, 54 resulted from tuberculosis, 52 from typhoid fever, 1 from measles, 2 from scarlet fever, 9 from diphtheria, 13 from whooping-cough, 4 from influenza, 8 from meningitis, 1 from erysipelas and 3 from malaria. One hundred and five were white and 42 colored; 63 were males and 84 females.

Of the 608 deaths due to general and non-communicable diseases and accidents, 444 were white, 161 colored, and in three instances the color is not stated; 306 were males, 301 were females, and in one instance the sex is not given.

October—Total deaths, all causes, October, 1909, 739, as follows: Infectious and communicable diseases, 148 (plus 1 culled from belated returns, making a total of 149); general and non-communicable diseases and accidents, 591.

Of the 149 deaths caused by infectious and communicable diseases, 64 resulted from tuberculosis, 49 from typhoid fever, 3 from measles, 1 from scarlet fever, 9 from diphtheria, 9 from whooping-cough, 5 from meningitis, 2 from erysipelas, 2 from malaria and 5 from septicemia. Ninety-seven were white and 52 colored; 64 were males and 85 females.

Of the 626 deaths due to general and non-communicable diseases and accidents, 448 were white, 140 colored, and in three instances the color is not stated; 316 were males, 273 were females, and in two instances the sex is not given.

November—Total deaths, all causes, November, 1909, 805, as follows: Infectious and communicable diseases, 179 (plus 1 culled from belated returns, making a total of 180); general and non-communicable diseases and accidents, 626.

Of the 180 deaths caused by infectious and communicable diseases, 96 resulted from tuberculosis, 40 from typhoid fever, 1 from scarlet fever, 12 from diphtheria, 6 from whooping-cough, 7 from meningitis, 3 from erysipelas, 2 from malaria, 6 from septicemia, 6 from influenza and 1 from pellagra. One hundred and twenty-four were white and 56 colored; 69 were males and 111 females.

Of the 626 deaths due to geenral and non-communicable diseases and accidents, 456 were white and 170 colored; 343 were males, 280 were females, and in three instances the sex is not given.

December—Total deaths, all causes, December, 1909, 776, as follows: Infectious and communicable diseases, 156 (plus 1 culled from belated returns, making a total of 157); general and non-communicable diseases and accidents, 620.

Of the 157 deaths caused by infectious and communicable diseases, 88 resulted from tuberculosis, 17 from typhoid fever, 5 from scarlet fever, 6 from measles, 9 from diphtheria, 13 from whooping-cough, 6 from meningitis, 2 from erysipelas, 1 from malaria, 4 from septicemia and 7 from influenza. One hundred and one were white and 56 colored; 86 were males and 71 females.

Of the 620 deaths due to general and non-communicable diseases and accidents, 449 were white, 167 colored, and in four instances the color is not stated; 342 were males, 277 were females, and in one instance the sex is not given.

TUBERCULOSIS.

January—Number of deaths reported, 102, as against 104 in December. Of these 102 deaths, 73, or 71%, occurred in white persons; the remainder, 29 deaths, or 29%, occurred in colored persons. In regard to sex, 53 were males and 49 females. Two deaths occurred in institutions. The youngest decedent was a white female, aged 11 months; the eldest was a white male, aged 76 years. The briefest period of illness was 5 weeks; the longest, 40 years.

February—Number of deaths reported, 99, as compared with 102 in January. Of these 99 deaths, 61, or 62%, occurred in white persons; the remainder, 38 deaths, or 38%, occurred in colored persons. With regard to sex, 53 were males and 46 females. Five deaths occurred in institutions. The youngest decedent was a white female, aged 18 days; the eldest was a white man, aged 82 years. The briefest period of illness was 18 days; the longest, 21 years.

March—Number of deaths reported, 111, as compared with 99 in February. Of these death, 68, or 61%, occurred in white persons; the remainder, 43 deaths, or 39%, occurred in colored persons. In regard to sex, 51 were males and 60 females. Four deaths occurred in institutions. The youngest decedent was a colored male, aged 10 months; the eldest was a white man, aged 78 years. The shortest period of illness was 2 weeks; the longest, 20 years.

April—Number of deaths reported 109, as comapred with 111 in March. Of these deaths, 64, or 59%, occurred in white persons; 44, or 41%, occurred in colored persons; and in one instance the color is not stated. In regard to sex, 55 were males and 54 females. Four deaths occurred in institutions. The youngest decedent was a white male, aged 8 months; the eldest was a white woman, aged 77 years. The briefest period of illness was 4 weeks; the longest, 25 years.

May—Number of deaths reported, 98, as compared with 109 in April. Of these deaths, 46, or 47%, occurred in white persons; 51, or 52%, occurred in colored persons; and in one instance the color is not stated. In regard to sex, 53 were males and 45 females. Six deaths occurred in institutions. The youngest decedent was a white male infant, 10 months old; the eldest was a colored woman, aged 85 years. The briefest period of illness was 9 days; the longest, 30 years.

June—Number of deaths reported, 104, as compared with 98 in May. Of these deaths, 71, or 68%, occurred in white persons; 33, or 32%, occurred in colored persons. With regard to sex, 47 were males, 56 females, and in one instance the sex is not given. Two deaths occurred in institutions. The youngest decedent was a colored male infant, aged 5 months; the eldest was a white woman, aged 73 years. The briefest period of illness was 4 weeks; the longest, 5 years.

July—Number of deaths reported, 113, as compared with 104 in June. Of these deaths, 59, or 52%, occurred in white persons; 54, or 48%, occurred in colored persons. With regard to sex, 59 were males and 54 females. Four deaths occurred in institutions. The youngest decedent was a white female infant, aged 5 months; the eldest was a white woman, aged 80 years. The briefest period of illness was 1 week; the longest, 25 years.

August—Number of deaths reported, 80, as compared with 113 in July. Of these deaths, 52, or 65%, occurred in white persons; 28, or 35%, occurred in colored persons. With regard to sex, 33 were males and 47 were females. Three deaths occurred in institutions. The youngest decedent was a white female infant, aged 4 months; the eldest was a white woman, aged 67 years. The briefest period of illness was 1 week; the longest, 25 years.

September—Number of deaths reported, 54, as compared with 80 in August. Of these deaths, 36, or 67%, occurred in white persons; 18, or 33%, occurred in colored persons. With regard to sex, 23 were males and 31 were females. Two deaths occurred in institutions. The youngest decedent was a colored male, aged 4 years; the eldest was a white man, aged 76 years. The briefest period of illness was 12 weeks; the longest, 20 years.

October—Number of deaths reported, 64, as compared with 54 in September. Of these deaths, 36, or 56%, occurred in white persons; 28, or 44%, occurred in colored persons. With regard to sex, 25 were males and 39 were females. No deaths occurred in institutions. The youngest decedent was a colored male, aged 8 months; the eldest was a white woman, aged 69 years. The briefest period of illness was 16 days; the longest, 15 years.

November—Number of deaths reported, 96, as compared with 64 in October. Of these deaths, 62, or 85%, occurred in white persons; 33, or 35%, occurred in colored persons, and in one instance the color is not stated. With regard to sex, 38 were males and 58 were females. Six deaths occurred in institutions. The youngest decedent was a colored male, aged 18 months; the eldest was a white man, aged 82 years. The briefest period of illness was 3 weeks; the longest, 20 years.

December—Number of deaths reported, 88, as compared with 96 in November. Of these deaths, 52, or 60%, occurred in white persons; 36, or 40%, occurred in colored persons. With regard to sex, 49 were males and 39 were females. One death occurred in an institution. The youngest decedent was a colored female, aged 8½ months; the eldest was a white woman, aged 79 years. The briefest period of illness was 3 weeks; the longest, 15 years.

INFLUENZA.

January—Deaths reported, 21, as compared with 11 in December and 3 in November. No cases of sickness reported, as in the month of December. Of the 21 decedents, 17 were white and 4 colored; 12 were males and 9 females. The youngest decedent was a white male, aged 5 months; 3 of the decedents were octogenarians and 2 were nonagenarians; the eldest was a white woman of 94 years. No epidemic center.

February—Deaths reported, 19, as compared with 21 in January. Cases of sickness reported, 3. Of the 19 decedents, 10 were white and 9 colored; 13 were males and 6 females. The youngest decedent was a colored male infant, aged 1 week; the eldest was a white woman, aged 83 years. No epidemic center. Of the 3 cases of sickness reported, all were colored, 2 males and 1 female.

March—Deaths reported, 42, as compared with 19 in February. No additional cases of sickness reported, as against 3 in February. Of the 42 decedents, 31 were white and 11 colored; 20 were males and 22 females. The youngest decedent was a colored male infant, aged 37 days; the eldest was a colored man, aged 92 years. No epidemic center.

April—Deaths reported, 46, as compared with 42 in March. Additional cases reported, 13, as compared with none in March. Of the 46 decedents, 36 were white and 10 colored; 22 were males, 23 females, and in one instance the sex is not stated. The youngest decedent was a white child, aged 1 month; the eldest was a colored woman, aged 89 years. Two epidemic centers—Frederick county and Olney district, Montgomery county—where the disease had already become epidemic in March. Of the 13 cases of sickness reported, 3 were white and 10 colored; 3 are males, 9 females, and in one instance the sex is not stated.

May—Deaths reported, 18, as compared with 46 in April. Additional cases reported, 4, as compared with 13 in April. Of the 18 decedents, 12 were white and 6 colored; 9 were males and 9 females. The youngest decedent was a white female, aged 28 days; the eldest was a white man, aged 90 years. Of the 4 cases of sickness, 1 was white, and in the remaining 3 the color is not stated. The sex is not stated in any case. No epidemic center.

June—Deaths reported, 10, as compared with 18 in May. Only one case of sickness reported, as compared with 4 in May and 13 in April. The case of sickness occurred in a white person, the sex of whom is not stated. Of the 10 decedents, 6 were white and 4 colored; 5 males and 5 females. The eldest decedent was a colored woman of 75 years; the youngest was a colored male infant, aged 7 months. No epidemic center.

July—Deaths reported, 4, as compared with 10 in June. No cases of sickness reported, as compared with 1 in June and 4 in May. Of the 4 decedents, 2 were white and 2 colored; 1 male and 3 females. The eldest decedent was a colored woman of 87; the youngest, a white woman, aged 20 years. No epidemic center.

August—Deaths reported, 2, as compared with 4 in July. No cases of sickness reported, as compared with none in July, 1 in June and 4 in May. Of the 2 decedents, 1 was white and 1 colored; both were males. The elder decedent was aged 72 years; the younger, 32 years. No epidemic center.

September—Deaths reported, 4, as compared with 2 in August. No cases of sickness reported, as compared with none in either July or August, 1 in June and 4 in May. Of the 4 decedents, 3 were white and 1 colored; 2 weer males and 2 females. The eldest decedent was aged 83; the youngest, 18 years. No epidemic center.

October—Deaths reported, none, as compared with 4 in September. No cases of sickness reported, as for August and September.

November—Deaths reported, 6, as compared with none in October. No cases of sickness reported, as for August, September and October.

December—Deaths reported, 7, as compared with 6 in November. No cases of sickness reported, as for August, September, October and November.

MUMPS.

January—No deaths and 18 cases reported, as compared with no deaths and no cases of sickness in December. Seventeen of the cases of sickness occurred in white persons, and 1 in a colored person. Five were males, 10 females, and in 3 instances the sex was not stated. Mumps is mildly epidemic (14 cases) in Annapolis.

February—No deaths and 12 cases of sickness reported, as compared with no deaths and 18 cases of sickness reported in January. All of the cases of sickness occurred in white persons. None were males and 3 females. There was a house epidemic (5 cases) in Annapolis.

March—No deaths and 24 cases reported, as against no deaths and 12 cases of sickness reported in February. All of the cases of sickness occurred in white persons; 14 were males and 10 females. Mumps is mildly epidemic in Mt. Washington, Baltimore county (6 cases), and in Union Mills, Carroll county (9 cases).

April—No deaths and 16 cases of sickness reported, as against no deaths and 24 cases of sickness reported in March. All of the cases of sickness occurred in white persons; 9 were males and 7 females. There is a house outbreak (3 cases) in Gilmore, Allegany county.

May—No deaths and 8 cases of sickness reported, as against no deaths and 16 cases of sickness reported in April. Six of the cases of sickness occurred in white persons; in the remaining 2 the color is not stated. Five were males, 1 a female, and in two instances the sex is not stated. No epidemic center.

June—No deaths and 8 cases of sickness reported, as against an equivalent number in May. All of the cases of sickness occurred in white persons; 5 were males, 1 a female, and in two instances the sex is not given. No epidemic center.

July—No deaths and 2 cases of sickness reported, as against 8 cases of sickness in June. Both cases of sickness occurred in white males, aged, respectively, 12 and 46 years.

August—No deaths and no cases of sickness reported, as against no deaths and 2 cases of sickness in July.

September—No deaths and 2 cases of sickness reported, as against no deaths and no cases of sickness in August. Both of the morbidity cases were white; one was a male, and in the other instance the sex is not stated.

October—No deaths and 1 case of sickness reported, as against no deaths and 2 cases of sickness in September. The morbidity case was a white female, aged 25 years. No epidemic center.

November—No deaths and no cases of sickness reported, as against no deaths and 1 case of sickness in October.

December—No deaths and 1 case of sickness reported, as against no deaths and no cases of sickness in November. The case of sickness occurred in a white boy, aged 8 years.

CHICKENPOX.

January—No deaths and 47 cases reported, as against no deaths and 14 cases reported in December. Of the 47 cases of sickness reported, 39 occurred in white persons; the color of the remaining 8 is not stated. Sixteen were males and 10 females; sex not stated in the remaining 21 cases. There is a house epidemic (7 cases) at Bengies, Baltimore county. Eight cases occurred in Westminster, Carroll county.

February—No deaths and 45 cases of sickness reported, as against no deaths and 47 cases of sickness reported in January. Thirty of the morbidity cases were whites; the color of the remaining 15 is not given. Sixteen were males, 12 were females, and in 17 cases the sex is not stated. No epidemic center.

March—One death was attributed to this cause and 21 additional cases reported, as compared with no deaths and 45 cases of sickness reported in February. The decedent was a white female, aged 15 months. All of the cases of sickness occurred in white persons; 13 were males, 6 females, and in two instances the sex is not stated. There is a house outbreak (5 cases) in Gilmore, Allegany county.

April—One death and 11 cases of sickness reported, as against one death and 21 cases of sickness reported in March. The decedent was a white female, aged 4½ years. All 11 cases of sickness occurred in white infants and children. The youngest was 6 months old; the eldest, 12 years. No epidemic center.

May—One death and 5 cases of sickness reported, as compared with one death and 11 cases of sickness reported in April. The decedent was a white male, aged 1 year. All 5 cases of sickness occurred in white children, all males. No epidemic center.

June—No deaths and 5 cases of sickness reported, as compared with one death and an equivalent number of cases of sickness reported in May. All 5 cases of sickness occurred in white persons; 3 were males, 1 was a female, and in one instance the sex is not stated. All are children. No epidemic center.

July—No deaths and 2 cases of sickness reported, as compared with no deaths and 5 cases of sickness reported in June. Both cases of sickness occurred in white persons; both were males, aged 9 and 7 years, respectively.

August—No deaths and 27 cases of sickness reported, as compared with no deaths and 2 cases of sickness reported in July. Of the 27 cases of sickness, all occurred in white children; 1 was a male, 3 were females, and in 23 instances the sex is not stated. One epidemic center (23 cases) at the Country Home for Children, Orange Grove, Baltimore county.

September—No deaths and 3 cases of sickness reported, as compared with no deaths and 27 cases of sickness reported in August. Of the 3 cases of sickness, all occurred in white persons; 1 was a male and 2 were females. The eldest patient was a white woman, 22 years old. No epidemic center.

October—No deaths and 7 cases of sickness reported, as compared with no deaths and 3 cases of sickness reported in September. Of the 7 cases of sickness, all occurred in white persons; 3 were males and 3 females, and in one instance the sex is not stated. No epidemic center.

November—No deaths and 17 cases of sickness reported, as compared with no deaths and 7 cases of sickness reported in October.

Of the 17 cases of sickness, 15 occurred in white persons and 2 in colored persons; 8 were males and 9 females. No epidemic center.

December—No deaths and 46 cases of sickness reported, as compared with no deaths and 17 cases of sickness reported in November. All of the 46 cases of sickness occurred in white persons; 14 were males, 6 females, and in 26 instances the sex is not stated. Three house epidemics—Ednor, Montgomery county (5 cases); Suitland, Prince George's county (6 cases), and Beaver Creek, Washington county (4 cases).

WHOOPING-COUGH.

January—Six deaths and 22 cases of sickness reported, as compared with 3 deaths and 24 cases of sickness reported in December. Two of the six decedents were white and 4 colored: one was a male and five were females. Of the 22 cases of sickness reported, 20 were white and 2 colored; 12 were males, 3 were females, and in 7 the sex was not stated. There are 13 cases of whooping-cough in Westminster, Carroll county.

February—Three deaths and 8 cases of sickness reported, as compared with 6 deaths and 22 cases of sickness reported in January. Two of the decedents were white and one colored. There were 2 males and 1 female. All eight of the morbidity cases were white; 3 were males and 5 females. No epidemic center.

March—Seven deaths and 100 cases of sickness reported, as against 3 deaths and 8 cases of sickness reported in February. Three of the decedents were white and 4 colored. There were 6 males and 1 female. Eleven of the cases of sickness occurred in white persons; in 89 the color is not stated. Two were males, 7 were females, and in 91 the sex is not given. Whooping-cough is epidemic in Carroll county.

April—Deaths reported, 5; additional cases reported, 2. as against 7 deaths and 100 cases of sickness reported in March. Of the 5 deaths, 2 occurred in white persons and 3 in colored persons; 2 were males and 3 females. The youngest decedent was a white male infant, aged 4 months 19 days; the eldest was a white child of 3 years. Both cases of sickness occurred in white males.

May—Deaths reported, 16; additional cases reported, 38, as compared with 5 deaths and 2 cases of sickness reported in April. Of the 16 deaths, 3 occurred in white persons, 12 in colored persons, and in one instance the color is not stated; 8 were males and 8 females. With 4 exceptions, all the deaths occurred in infants of 2 years old and under. Thirty of the cases of sickness occurred in white persons; in the remaining 8 the color is not stated. Five were males, 7 females, and in 26 the sex is not stated. Four home outbreaks—Roland Park, 3 cases; Lansdowne (2), 3 and 4 cases, respectively; Colora, Cecil county, 4 cases.

June—Deaths reported, 12; additional cases reported, 22, as compared with 16 deaths and 38 cases reported in May. Of the 12 decedents, 5 were white and 7 colored; 6 were males, 5 females, and in one instance the sex is not given. All were children under 2 years of age. Nineteen of the morbidity cases are white and 3 colored; 12 were males and 10 females. Two house epidemics of 3 cases each—one at Sparrows Point, Baltimore county, and the other at Westminster, Carroll county.

July—Deaths reported, 10; additional cases reported, 31, as compared with 12 deaths and 22 cases reported in June. Of the 10 decedents, 7 were white and 3 colored; 3 were males and 7 females. All but one were children under 2 years of age. Twenty-seven of the morbidity cases were white and 4 colored; 5 were males, 16 females, and in 10 instances the sex is not stated. Two house epidemics of 3 and 4 cases, respectively—one at Owings Mills, Baltimore county, and the other at Limekiln, Frederick county.

August—Deaths reported, 18; additional cases reported, 24, as compared with 10 deaths and 31 cases reported in July. Of the 18 decedents, 13 were white and 5 colored; 5 were males, 12 females, and in one instance the sex is not stated. All but two were children under 2 years of age. Twenty-three of the morbidity cases are white and 1 colored; 10 were males, 12 females, and in two instances the sex is not stated. One house epidemic of 3 cases at Shady Side, Anne Arundel county.

September—Deaths reported, 13; additional cases reported, 35, as compared with 18 deaths and 24 cases reported in August. Of the 13 decedents, 9 were white and 4 colored; 5 were males and 8 females. All but three were children under 2 years of age. Thirty-four of the morbidity cases are white and 1 colored; 13 were males, 18 females, and in four instances the sex is not stated. One house epidemic of 3 cases, at Hoopersville, Dorchester county.

October—Deaths reported, 9; additional cases reported, 21, as compared with 13 deaths and 35 cases reported in September. Of the 9 decedents, 6 were white and 3 colored; 4 were males and 5 females. All were children under 2 years of age. Twenty of the morbidity cases are white and 1 colored; 5 were males, 8 females, and in eight instances the sex is not stated. Two house epidemics—one at Annapolis (6 cases), and the other at Woodbine, Carroll county (5 cases).

November—Deaths reported, 6; additional cases reported, 13, as compared with 9 deaths and 21 cases reported in October. Of the 6 decedents, 3 were white and 3 colored; 3 were males and 3 females. All were children under 2 years of age. The youngest was a colored female infant, aged 1 month 5 days. All of the morbidity cases were white; 5 were males, 5 females, and in three instances the sex is not stated. Two house epidemics—one at Rock Hall, Kent county (3 cases), and the other at Crisfield, Somerset county (3 cases).

December—Deaths reported, 13; additional cases reported, 39, as compared with 6 deaths and 13 cases reported in November. Of the 13 decedents, 4 were white and 9 colored; 7 were males and 6 females. All were children, 3 years of age and under. The youngest was a white female infant, aged 1 month. Twenty-nine of the morbidity cases were white, 2 colored, and in 8 instances the color is not given; 15 were males, 12 females, and in 12 instances the sex is not stated. One epidemic center—Churchton, Anne Arundel county (12 cases).

MEASLES.

January—Number of deaths reported, 12; additional cases, 195, as against 6 deaths and 72 cases reported in December. All of the deaths occurred in infants and children. Seven were white and 5 colored; 4 were males and 8 females. Of the 195 cases of sickness reported, 171 occurred in white persons; in the remainder, 24 cases, the color is not stated. Eighty-eight were males, 66 were females, and in 41 the sex was not stated. There are three outbreaks in Baltimore county—Catonsville, 41 cases; Highlandtown, 19 cases, and Athol, 12 cases.

February—Number of deaths reported, 12, as against an equivalent number in January. Additional cases reported, 472, as compared with 195 in January. Nine of the decedents were white and 3 colored; 5 were males and 7 females. Of the morbidity cases, 274 are white, 7 colored, and in 191 the color is not stated; 149 were males, 107 females, and in 216 the sex is not given. Six epidemic centers—Baltimore county, Catonsville, 74 cases; Pikesville, 43 cases; Highlandtown, 43 cases; Cecil county, 150 cases: Harford county, Aberdeen, 27 cases; Washington county, Hagerstown, 30 cases.

March—Number of deaths reported, 11, as compared with 12 in February; additional cases reported, 463, as compared with 472 in February. Nine of the decedents were white and 2 colored; 8 were males and 3 females. Two of the deaths occurred in one family. Of the morbidity cases, 384 were white, 63 colored, and in 16 the color is not given; 224 were males, 204 females, and in 35 instances the sex is not stated. There were 10 epidemic centers, as follows: Churchton, Anne Arundel county, 20 cases; Catonsville, Baltimore county ,41 cases; Perryman, Harford county, 30 cases; Hyattsville (13 cases), Capitol Heights (9 cases) and Cheltenham (16 cases), all in Prince George's county; Hagerstown (70 cases), Keedysville

(59 cases), Bissell (8 cases) and Leitersburg (39 cases), all in Washington county.

April—Number of deaths reported, 14, as compared with 11 in March. Additional cases of sickness reported, 332, as compared with 463 in March. Eleven of the decedents were white and 3 colored; 7 were males, 6 females, and in one instance the sex is not stated. The youngest decedent was a colored infant, aged 11 days, ill 3 days; the eldest was a colored girl of 19 years. Of the morbidity cases, 284 were white, 17 colored, and in 31 cases the color is not stated; 146 were males, 118 were females, and in 68 instances the sex is not stated. There were 4 epidemic centers, as follows: Leitersburg (13 cases), Hagerstown (33 cases), Keedysville (46 cases) and Clearspring (11 cases), all in Washington county.

May—Number of deaths reported, 9, as compared with 14 in April. Additional cases reported, 271, as compared with 332 in April. Seven of the decedents were white and 1 colored; 6 were males and 2 females. Of the morbidity cases, 236 were white, 27 colored; 6 were males and 2 females. Of the morbidity cases, 236 were white, 27 colored, and in 8 instances the color is not stated; 115 were males, 45 females, and in 71 instances the sex is not stated. Five epidemic centers—Annapolis, Anne Arundel county (18 cases); Towson (15 cases) and Lansdowne (27 cases), Baltimore county; Hagerstown (51 cases) and Clearspring (33 cases), Washington county.

June—Number of deaths reported, 7, as compared with 9 in May. Additional cases reported, 196, as compared with 271 in May. Six of the decedents were white and 1 colored; 2 were males and 5 females. Of the morbidity cases, 193 were white, 1 colored, and in 2 instances the color is not given. Three epidemic centers—Haight, Carroll county, 64 cases; Jefferson, Frederick county, 13 cases, and Trego, Washington county, 7 cases.

July—Number of deaths reported, 2, as compared with 7 in June. Additional cases reported, 128, as compared with 196 in June. Both of the decedents were white females; the younger was but 16 days old. Of the morbidity cases, 107 were white and 2 colored; 51 were males, 60 females, and in 17 instances the sex is not stated. Three epidemic centers—Sykesville, Carroll county, 28 cases; Freedom, Carroll county, 19 cases, and Keedysville, Washington county, 19 cases.

August—Number of deaths reported, 2, as compared with an equivalent number in July. Additional cases reported, 28, as compared with 128 in July. Both of the decedents were males; one white and one colored; the younger was 6 months old. Of the morbidity cases, 25 were white and 3 colored; 15 were males and 13 females. One epidemic center—Frederick, Frederick county, 15 cases.

September—Number of deaths reported, 1, as compared with 2 in August. Additional cases reported, 37, as compared with 28 in August. The decedent was a colored male infant. Of the morbidity cases, all were white; 13 were males, 20 females, and in 4 instances the sex is not stated. One epidemic center—Frederick, Frederick county, 33 cases.

October—Number of deaths reported, 3, as compared with 1 in September. Additional cases reported, 120, as compared with 37 in September. One of the decedents was white and 2 colored. Two were males and 1 was a female. Of the morbidity cases, 117 were white, 1 colored, and in 2 instances the color is not stated; 10 were males, 16 females, and in 94 instances the sex is not stated. Two epidemic centers—Frederick, Frederick county, 88 cases, and Ridgely, Caroline county, 11 cases.

November—Number of deaths reported, none, as compared with 3 in October. Additional cases reported, 134, as compared with 120 in October. Of the morbidity cases, 125 were white, and in 9 instances the color is not stated; 72 were males, 53 females, and in 9 instances the sex is not stated. Five epidemic centers—Ridgely, Caroline county, 13 cases; Hampstead, Carroll county, 7 cases; Middletown (24 cases), Frederick (43 cases) and Unionville (8 cases), Frederick county.

December—Number of deaths reported, 6, as compared with none in November. Additional cases reported, 98, as compared with 134 in November. Of the morbidity cases, 93 were white, 3 colored, and in 2 instances the color is not stated; 39 were males, 45 females, and in 14 instances the sex is not stated. Three epidemic centers—Denton, Caroline county, 7 cases; Port Deposit, Cecil county, 17 cases, and Middletown, Frederick county, 24 cases.

SCARLET FEVER.

January—One death, that of a white man, aged 31, as compared with 2 deaths in December. Additional cases reported, 96, as compared with an equivalent number in December. Eighty-six of the cases of sickness occurred in white persons; in the remaining 10 the color is not given. Thirty-six were males, 47 females, and in 13 the sex was not stated. There is a house outbreak (5 cases) at Lonaconing, Allegany county.

February—Deaths reported, 4, as compared with 1 in January. All four deaths occurred in white persons. Two were males and 2 females. Additional cases reported, 49, as compared with 96 in January. Forty-eight of the morbidity cases were white; in one the color is omitted; 22 were males, 21 females, and in 5 the sex is not stated. No epidemic center.

March—One death reported, that of a white male, aged 4 years, as compared with 4 deaths in February. Additional cases reported, 70, as compared with 49 in February. All of the morbidity cases occurred in white persons; 21 were males, 31 females, and in 18 cases the sex is not stated. There was an outbreak (11 cases) in Lonaconing, Allegany county; a house outbreak (3 cases) occurred in Middletown, Frederick county.

April—Deaths reported, 5, as compared with 1 in March. Additional cases reported, 27, as compared with 70 in March. All 5 of the decedents were white; 3 were males and 2 females. Of the morbidity cases, 25 were white, and in 2 the color is not stated; 9 were males, 17 females, and in one the sex is not stated. No epidemic center.

May—Deaths reported, 2, as compared with 5 in April. Additional cases reported, 14, as compared with 27 in April. Both of the decedents were white children, a male and a female. All of the morbidity cases occurred in white children, 8 males and 6 females. No epidemic center.

June—No deaths reported, as compared with 2 in May. Cases of sickness reported, 22, as compared with 14 in May. All of the cases of sickness occurred in white persons; 10 were males, 11 females, and in one instance the sex is not indicated. Scarlet fever is mildly epidemic (7 cases) in Hampstead, Carroll county.

July—No deaths reported, as in the month of June. Cases of sickness reported, 23, as compared with 22 in June. All of the cases of sickness occurred in white persons; 14 were males and 9 were females. No epidemic center.

August—No deaths reported, as in the month of June and July. Additional cases of sickness reported, 23, as compared with an equivalent number in July. Fifteen of the cases of sickness occurred in white persons, 3 in colored persons, and in 5 cases the color is not stated; 9 were males, 9 females, and in 5 cases the sex is not stated. No epidemic center.

September—Two deaths reported, as against no deaths in August. Both deaths occurred in white children, one male and one female. Cases of sickness reported, 42, as compared with 23 in August. Thirty-nine of the cases of sickness occurred in white persons, 2 in colored persons, and in one case the color is not stated; 18 were males, 20 were females, and in 4 cases the sex is not stated. A house epidemic (4 cases) at Silver Springs, Montgomery county.

October—One death reported, as against 2 deaths in September. The death occurred in a white boy, aged 15 years. Cases of sickness reported, 56, as compared with 42 in September. Fifty-two of the cases of sickness occurred in white persons, 3 in colored persons, and in one case the color is not stated; 19 were males, 16 were females, and in 17 cases the sex is not stated. Two house epidemics —Elkton, Cecil county, 4 cases, and Church Hill, Queen Anne's county, 9 cases.

November—One death reported, as against an equivalent number in October. The death occurred in a white girl, aged 10 years. Cases of sickness reported, 101, as compared with 56 in October. Ninety-nine of the cases of sickness occurred in white persons, and in 2 cases the color is not stated; 44 were males, 45 were females, and in 12 cases the sex is not stated. Three epidemic centers—Betterton, Kent county, 13 cases; Kensington, Montgomery county, 14 cases, and Boonsboro, Washington county, 10 cases.

December—Four deaths reported, as against one in November. The deaths occurred in white persons, 2 males and 2 females. Cases of sickness reported, 62, as compared with 101 in November. Sixty of the cases of sickness occurred in white persons and 2 in colored persons; 30 were males, 26 weer females, and in 6 instances the sex is not stated. One case of sickness occurred in a white male infant, 2 weeks old. One epidemic center—Betterton, Kent county, 16 cases.

DIPHTHERIA.

January—Deaths reported, 13, as against 18 in December. Cases of sickness reported, 72, as against 70 in December. Nine of the 13 deaths occurred in white persons, 4 in colored persons; 9 were males and 4 were females. The youngest decedent was a colored male, aged 3 weeks. One of the decedents, a white male, aged 5 months, was ill only 9 hours. Of the 72 cases of sickness reported, 64 occurred in white persons, 5 in colored persons, and in 3 instances the color is not given. Thirty were males, 34 females, and in 8 the sex is not stated. No epidemic outbreak.

February—Deaths reported, 6, as compared with 13 in January. Three of the decedents were white and 3 colored; 3 were males and 3 females. Additional cases reported, 46, as compared with 72 in January. Of these 46 cases, 41 were white and 5 colored; 21 were males, 22 females, and in 3 instances the sex is not stated. No epidemic center.

March—Deaths reported, 11, as compared with 6 in January. Of the 11 decedents, 8 were white and 3 colored; 6 were males and 5 females. Additional cases reported, 40, as compared with 46 in February. Of these 40 cases, 15 were males, 21 females, and in 4 instances the sex is not stated; 32 were white and 8 colored. No epidemic center.

April—Number of deaths reported, 8, as compared with 11 in March. Additional cases reported, 43, as compared with 40 in March. Seven of the decedents were white and 1 colored; 1 was a male, 6 females, and in 1 instance the sex is not stated. Of the morbidity cases, 1 was white and 42 colored; 18 were males, 16 females, and in 9 instances the sex is not stated. There was a house outbreak (7 cases) at Roslyn, Baltimore county.

May—Number of deaths reported, 4, as compared with 8 in April. Additional cases reported, 23, as compared with 43 in April. All 4 of the decedents were white, 2 males and 2 females. Of the cases of sickness, 19 were white, 1 colored, and in 3 instances the color is not stated. Five were males, 13 females, and in 5 instances the sex is not stated. No epidemic center.

June—Number of deaths reported, 3, as compared with 4 in May. Cases of sickness reported, 20, as compared with 23 in May. Two of the decedents were white and 1 colored; 2 were males and 1 a female. Of the cases of sickness, 18 occurred in white persons, while in two instances the color is not stated. Six were males, 7 females, and in 7 instances the sex is not given. There is a house epidemic (3 cases) at Pleasant Grove, Baltimore county.

July—Number of deaths reported, 3, as compared with an equivalent number in June. Additional cases reported, 22, as compared with 20 in June. All 3 of the decedents were white; 1 was a male and 2 were females. All of the cases of sickness occurred in white persons; 13 were males, 8 females, and in 1 instance the sex is not given. No epidemic center.

August—Number of deaths reported, 2, as compared with 3 in July. Additional cases reported, 36, as compared with 22 in July. Both of the decedents were white females. Twenty-three of the cases of sickness occurred in white persons, 7 in colored persons, and in 6 instances the color is not given; 13 were males, 17 females, and in 6 instances the sex is not given. No epidemic center.

September—Number of deaths reported, 9, as compared with 2 in August. Additional cases reported, 45, as compared with 36 in August. Eight of the decedents were white and 1 colored; 4 were males, 4 females, and in 1 instance the sex is not stated. Forty-four of the cases of sickness occurred in white persons, and 1 in a colored person; 22 were males, 20 females, and in 3 instances the sex is not given. One epidemic center—Gilmore, Allegany county, 8 cases.

October—Number of deaths reported, 9, as compared with an equivalent number in September. Additional cases reported, 106, as compared with 45 in September. Eight of the decedents were white and 1 colored; 4 were males and 5 females. The youngest decedent was a white female infant, aged 17 days. Ninety-three of the cases of sickness occurred in white persons, 11 in colored persons, and in 2 instances the color is not given; 43 were males, 58 females, and in 5 instances the sex is not given. Five epidemic centers—Cumberland, Allegany county, 14 cases; Federalsburg, Caroline county, 9 cases; Mt. Rainier, Prince George's county, 7 cases; Keedysville, Washington county, 9 cases, and Whaleyville, Worcester county, 12 cases.

November—Number of deaths reported, 12, as compared with 9 in October. Additional cases reported, 101, as compared with 106 in October. All of the decedents were white; 3 were males and 9 females. The youngest decedent was a white female infant, aged 10 months. Ninety-seven of the cases of sickness occurred in white persons, 3 in colored persons, and in 1 instance the color is not given; 45 were males, 55 females, and in one instance the sex is not given. Three epidemic centers—Cumberland, Allegany county, 16 cases; Ingleside, Queen Anne's county, 5 cases, and Deal's Island, Somerset county, 9 cases.

December—Number of deaths reported, 9, as compared with 12 in November. Additional cases reported, 61, as compared with 101 in November. Eight of the decedents were white and 1 colored; 5 were males and 4 females. The youngest decedent was a colored male infant, aged 2 months and 21 days. Fifty-one of the cases of sickness occurred in white persons, and in 10 instances the color is not given; 23 were males, 28 females, and in 10 instances the sex is not given. No epidemic center.

TYPHOID FEVER.

January—Deaths reported, 12, as compared with 27 in December. (Fourteen names appear on the death roll from typhoid fever, but 2 should be deducted, as these persons also had tuberculosis and are enumerated as such.) Of the 12 deaths, 10 occurred in white persons and 2 in colored persons; 9 were males and 3 females. Cases of sickness reported, 72, as compared with 78 in December and 132 in November. Sixty-three of the cases of sickness reported occurred in white persons, 7 in colored persons, and in 2 instances the color is not stated. Thirty-eight were males, 26 females, and in 8 instances the sex is not given. The largest number of cases (9) occurred in Gamber, Carroll county. There is a house epidemic (6) at Bel Alton, Charles county.

February—Deaths reported, 9, as compared with 12 in January. Additional cases reported, 21, as compared with 72 in January. Five of the decedents were white and 4 colored; 7 were males and 2 females. Seventeen cases of sickness occurred in white persons, 2 in colored persons, and in 2 cases the color is not mentioned. There are two house outbreaks—Lauraville, Baltimore county, 3 cases, and Ewell, Somerset county, 3 cases.

March—Deaths reported, 8, as compared with 9 in February. Additional cases reported, 25, as compared with 21 in February.

Five of the decedents were white and 3 colored; 4 were males and 4 females. Of the 25 cases of sickness, 18 were white persons, 5 colored, and in 2 instances the color is not given; 13 were males and 12 females. No epidemic center.

April—Deaths reported, 10, as compared with 8 in March. Additional cases reported, 25, as compared with an equivalent number in March. Six of the decedents were white and 4 colored; 14 were males and 11 females. No epidemic center.

May—Deaths reported, 8, as compared with 10 in April. Additional cases reported, 31, as compared with 25 in April and also in March. Seven of the decedents were white and 1 colored; 6 were males and 2 females. Of the cases of sickness, 29 were white and 2 colored; 16 were males, 13 females, and in 2 instances the sex is not stated. No epidemic center.

June—Deaths reported, 11, as compared with 8 in May. Additional cases reported, 62, as compared with 31 in May. Seven of the decedents were white and 4 colored; 5 were males and 6 females. Of the cases of sickness, 52 were white and 10 colored; 36 were males, 24 females, and in 2 instances the sex is not stated. The largest number of cases (8) occurred in Cumberland.

July—Deaths reported, 30, as compared with 11 in June. Additional cases reported, 58, as compared with 62 in June. Seventeen of the decedents were white and 13 colored; 13 were males and 17 females. Of the cases of sickness, 281 were white, 67 colored, and in 10 instances the color is not stated; 160 were males, 191 females, and in 7 instances the sex is not stated. Six epidemic centers—Cumberland, Allegany county, 17 cases; Cambridge, Dorchester county, 23 cases; Toddville, Dorchester county, 13 cases; Chestertown, Kent county, 29 cases; Salisbury, Wicomico county, 27 cases, and Snow Hill, Worcester county, 23 cases.

August—Deaths reported, 48, as compared with 30 in July. Additional cases reported, 401, as compared with 358 in July. Thirty-six of the decedents were white, 11 colored, and in 1 instance the color is not stated; 25 were males and 23 females. Of the cases of sickness, 312 were white, 63 colored, and in 26 instances the color is not stated; 192 were males, 185 females, and in 24 instances the sex is not stated. Four epidemic centers—Cumberland, Allegany county, 11 cases; Lutherville, Baltimore county, 12 cases; Elkridge, Howard county, 21 cases, and Snow Hill, Worcester county, 9 cases.

September—Deaths reported, 52, as compared with 48 in August. Additional cases reported, 432, as compared with 401 in August. Thirty-nine of the decedents were white and 13 colored; 19 were males and 33 females. Of the cases of sickness, 364 were white, 61 colored, and in 7 instances the color is not stated; 219 were males, 194 females, and in 19 instances the sex is not stated. Seven epidemic centers—Cumberland, Allegany county, 22 cases; Violetville, Baltimore county, 12 cases; St. Vincent's Asylum, Baltimore county, 17 cases; Springfield Hospital, Sykesville, Carroll county, 13 cases; La Plata, Charles county, 14 cases; Buckeystown, Frederick county, 9 cases, and Salisbury, Wicomico county, 15 cases.

October—Deaths reported, 49, as compared with 52 in September. Additional cases reported, 291, as compared with 432 in September. Thirty-four of the decedents were white and 15 colored; 26 were males and 23 females. Of the cases of sickness, 245 were white, 38 colored, and in 8 instances the color is not stated; 133 were males, 119 females, and in 39 instances the sex is not stated. Three epidemic centers—Cumberland, Allegany county, 19 cases; Chestertown, Kent county, 13 cases, and Clearspring, Washington county, 9 cases.

November—Deaths reported, 40, as compared with 49 in October. Additional cases reported, 178, as compared with 291 in October. Twenty-five of the decedents were white and 15 colored; 15 were males and 25 females. Of the cases of sickness, 159 were white, 15 colored, and in 4 instances the color is not stated; 91 were males, 83 females, and in 4 instances the sex is not stated. The youngest patient was a white female infant, aged 19 months. Three epidemic centers—Cumberland, Allegany county, 17 cases; Salisbury, Wicomico county, 9 cases, and Pocomoke City, Worcester county, 8 cases.

December—Deaths reported, 17, as compared with 40 in November. Additional cases reported, 83, as compared with 178 in November. Thirteen of the decedents were white and 4 colored; 9 were males and 8 females. Of the cases of sickness, 70 were white and 13 colored; 46 were males, 36 females, and in 1 instance the sex is not stated. The youngest patient was a colored male infant, aged 2 years. Two epidemic centers—Cumberland, Allegany county, 14 cases, and Hughesville, Charles county, 8 cases.

SMALLPOX.

January—No deaths and no cases of sickness reported.

February—No deaths and no cases of sickness reported.

March—No deaths and one case reported, as compared with no deaths and no cases reported in February. The case of sickness occurred in a white man, aged 41 years. This is the first case of smallpox occurring in Maryland in the year 1909. In 1908 there was a total of 33 cases of smallpox.

April—No deaths and 8 cases reported, as compared with no deaths and one case reported in March. Four of the cases of sickness occurred in white persons and 4 in colored persons. All eight were males.

May—No deaths and no cases of sickness reported, as against no deaths and 8 cases of sickness reported in April.

October—No deaths and 3 cases of sickness reported. Two of the patients were white and 1 colored; 2 were males and 1 was a female. One case occurred at Sparrows Point, Baltimore county; the other two at Pomonkey, Charles county.

November—No deaths and no cases of sickness reported, as against no deaths and 3 cases of sickness reported in October.

December—No deaths and 4 cases of sickness reported, as against no deaths and no cases of sickness reported in November. The 4 cases of sickness occurred in colored persons, 3 males and 1 female.

OTHER DISEASES.

January—ERYSIPELAS: One death and no cases of sickness reported, as against 1 death and 1 case of sickness reported in December. The deceased was a white female infant, 15 days old.

January—MENINGITIS: Two deaths and 2 cases of sickness reported, as against 8 deaths and 2 cases of sickness reported in December. Both of the decedents were white; one male and one female. The 2 cases of sickness occurred in white persons, 1 a male, and the sex of the other was not stated.

January—MALARIA: No deaths and no cases of sickness reported.

January—SEPTICEMIA: Three deaths and no cases of sickness reported, as against 10 deaths and no cases of sickness reported in December. All 3 of the decedents were females, 2 white and 1 colored.

January—GERMAN MEASLES: No deaths and 3 cases of sickness reported, as compared with no deaths and no cases of sickness reported in December. Two of the cases of sickness occurred in white persons; in the third case the color was not given. One was a male, and the other 2 is not stated.

January—IMPETIGO CONTAGIOSA: No deaths and 54 cases reported, as against no deaths and no cases of the disease reported in December. Four of the cases of sickness occurred in white persons; color in 50 cases not stated. Two were males and 2 females; in 50 cases the sex is not given.

January—OPHTHALMIA NEONATORUM: One death reported in an unnamed colored child, sex not given, aged 15 days.

February—ERYSIPELAS: No deaths and no cases of sickness reported, as against 1 death in January.

February—MENINGITIS: Thirteen deaths and no cases of sickness reported, as compared with 2 deaths and 2 cases of sickness reported in January. Of the 13 decedents, 10 were white and 3 colored; 9 were males and 4 females.

February—MALARIA: Three deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in January. One of the decedents was white and 2 colored; 2 were males and 1 was a female.

February—SEPTICEMIA: Deaths reported, 3; additional cases reported, 2, as compared with 3 deaths and no cases of sickness reported in January. All 3 deaths occurred in females, 2 white and 1 colored. Both cases of sickness occurred in white women.

February—GERMAN MEASLES: No deaths and five cases of sickness (house outbreak at Towson) reported, as against no deaths and 3 cases of sickness reported in January. All of the morbidity cases were white, 4 males and 1 female.

February—IMPETIGO CONTAGIOSA: No deaths and 4 cases of sickness reported, as against no deaths and 54 cases of sickness reported in January. All 4 cases of sickness occurred in white children, 1 male and 3 females.

March—ERYSIPELAS: One death, that of a white female infant, aged 3 months, and 2 cases of sickness reported, as against no deaths and no cases of sickness reported in February. Both of the cases of sickness occurred in white females.

March—MENINGITIS: Twelve deaths and no cases of sickness reported, as against 13 deaths and no cases reported in February. Ten of the decedents were white and 2 colored; 7 were males and 5 females. No epidemic center.

March—MALARIA: One death and no cases of sickness reported, as against 3 deaths and no cases of sickness reported in February. The death occurred in a white woman, aged 81 years.

March—SEPTICEMIA: Deaths reported, 3, and no additional cases reported, as against an equivalent number of deaths and 2 additional cases reported in February. The three decedents were white females.

March—GERMAN MEASLES: No deaths and no cases of sickness reported, as against no deaths and 5 cases of sickness in February.

March—IMPETIGO CONTAGIOSA: No deaths and no cases of sickness reported, as against no deaths and 4 cases of sickness reported in February.

April—ERYSIPELAS: Two deaths and 2 cases of sickness reported, as compared with 1 death and 2 cases of sickness reported in March. Both of the decedents were white, a male and a female. Both cases of sickness occurred in white persons, a male and a female.

April—MENINGITIS: Seven deaths and no cases of sickness reported, as against 12 deaths and no cases of sickness reported in

March. Four of the decedents were white and 3 colored; 4 were males and 3 females. No epidemic center.

April—Malaria: One death, that of a white man, aged 79 years, and no cases of sickness reported, as against one death and no cases of sickness reported in March.

April—Septicemia: Deaths reported, 5, as against 3 in March. No additional cases reported, as for the month of March. Four of the decedents were white and 1 colored; 4 were females, and in 1 instance the sex is not stated. This was a colored infant but 2 weeks old.

April—German Measles: No deaths and but 2 cases of sickness reported, as compared with no deaths and no cases of sickness reported in March. The cases of sickness occurred in white children, both females.

May—Erysipelas: No deaths and 1 case of sickness reported, that of a white man, aged 40 years, as compared with 2 cases of sickness reported in April.

May—Meningitis: Five deaths and no cases of sickness reported, as against 7 deaths and no cases of sickness reported in April. Three of the 5 decedents were white and 2 colored; 4 were males and 1 was a female. No epidemic center.

May—Malaria: Two deaths and no cases of sickness reported, as against one death and no cases of sickness reported in April. One of the decedents was a white male, aged 74 years; the other was a colored female, aged but 6 months.

May—Septicemia: Deaths reported, 6, as against 5 in April. No additional cases reported, as for the month of April. Four of the decedents were white and 2 colored; 1 was a male and 5 were females.

May—German Measles: No deaths and no cases of sickness reported, as against no deaths and 2 cases of sickness reported in April.

June—Erysipelas: Deaths reported, 3, as against no deaths in May. All 3 decedents were white, 2 males and 1 female. Cases of sickness reported, 4, as compared with 1 in May. All 4 were white persons; 3 were males, and in one instance the sex is not stated.

June—Meningitis: Seven deaths and 1 case of sickness reported, as against 5 deaths and no cases of sickness reported in May. Four of the decedents were white and 3 colored. All were males. The case of sickness was that of a white male.

June—Malaria: Two deaths and no cases of sickness reported, as against an equivalent number in May. One of the decedents was a white male; the other was a colored female.

June—Septicemia: One death, that of a colored female, and 1 case of sickness reported, also a colored female, as against 6 deaths and no additional cases reported in May.

July—ERYSIPELAS: Deaths reported, 1, as against 3 deaths in June. The deceased was a white female infant, aged 7 months. Cases of sickness reported, 2, as compared with 4 in June. Both were white persons, 1 male and 1 female.

July—MENINGITIS: Ten deaths and 2 cases of sickness reported, as against 7 deaths and 1 case of sickness reported in June. Six of the decedents were white and 4 colored. Seven were males and 3 females. One case of sickness was that of a white male, aged 5 months; the other was a colored girl, aged 11 years.

July—MALARIA: One death and no cases of sickness reported, as against 2 deaths and no cases of sickness reported in June. The decedent was a white female, aged 2 years 7 months.

July—SEPTICEMIA: Five deaths and no cases of sickness reported, as against 1 death and 1 additional case of sickness reported in June. Three of the decedents were white and 2 colored; all 5 were females.

July—GERMAN MEASLES: No deaths and one case of sickness reported, as against no deaths and no cases of sickness since April. At that time there were but 2 cases of sickness.

August—ERYSIPELAS: Deaths reported, 1, as against an equivalent in July. The decedent was a white female, aged 8 years. One case of sickness reported, as compared with 2 in July. The case of sickness occurred in a white man, aged 56 years.

August—MENINGITIS: Twelve deaths and no cases of sickness reported, as against 10 deaths and 2 cases of sickness reported in July. Seven of the decedents were white and 5 colored. Eight were males and 4 females. No epidemic center.

August—MALARIA: One death and no cases of sickness reported, as against 1 death and no cases of sickness reported in July. The decedent was a colored male, aged 59 years.

August—SEPTICEMIA: One death and no cases of sickness reported, as against 5 deaths and no cases of sickness reported in July. The decedent was a colored woman, 21 years old.

August—GERMAN MEASLES: No deaths and three cases of sickness reported, as against no deaths and 1 case of sickness in July. No epidemic center.

September—ERYSIPELAS: Deaths reported, 1, as against an equivalent number in August. The decedent was a white female, aged 2 months. No cases of sickness reported, as compared with 1 in August.

September—MENINGITIS: Eight deaths and no cases of sickness reported, as against 12 deaths and no cases of sickness reported in August. Seven of the decedents were white and 1 colored. Three were males and 5 females. No epidemic center.

September—MALARIA: Three deaths and 4 cases of sickness reported, as against 1 death and no cases of sickness reported in August. The decedents were colored males, aged, respectively, 3, 8 and 16 years. Of the 4 cases of sickness, 3 were white and 1 colored; 3 were males and 1 was a female.

September—SEPTICEMIA: No deaths and no cases of sickness reported, as against 1 death and no cases of sickness reported in August.

September—GERMAN MEASLES: No deaths and 3 cases of sickness reported, as against an equivalent number in August. No epidemic center.

October—ERYSIPELAS: Deaths reported, 2, as against 1 in September. The decedents were white, 1 male and 1 female. Two cases of sickness reported, both white, as compared with none in September.

October—MENINGITIS: Five deaths and no cases of sickness reported, as against 8 deaths and no cases of sickness reported in September. Four of the decedents were white and 1 colored; 4 were males and 1 female. No epidemic center.

October—MALARIA: Two deaths and 1 case of sickness reported, as against 3 deaths and 4 cases of sickness reported in September. One of the decedents was a white male infant, aged 2 months; the other was a colored woman, aged 47 years. The case of sickness occurred in a colored man, aged 22 years.

October—SEPTICEMIA: Five deaths and no cases of sickness reported, as against no deaths and no cases of sickness reported in September. All 5 decedents were females, 4 white and 1 colored.

October—GERMAN MEASLES: No deaths and 3 cases of sickness reported, as against an equivalent number in September. No epidemic center.

November—ERYSIPELAS: Deaths reported, 3, as against 2 in October. The decedents were white, 1 male and 2 females. Four cases of sickness reported, all white females, as compared with 2 in October.

November—MENINGITIS: Seven deaths and 1 case of sickness reported, as against 5 deaths and no cases of sickness reported in October. Five of the decedents were white and 2 colored; 4 were males and 3 females. No epidemic center.

November—MALARIA: Two deaths and no cases of sickness reported, as against 2 deaths and 1 case of sickness reported in October. Both of the decedents were white adults, 1 male and 1 female.

November—SEPTICEMIA: Six deaths and no cases of sickness reported, as against 5 deaths and no cases of sickness reported in October. Two of the decedents were males and 3 females; all were white adults. One was a man, aged 91 years.

November—GERMAN MEASLES: No deaths and 1 case of sickness reported, as against no deaths and 3 cases of sickness reported in October. No epidemic center.

November—PELLAGRA: One death and no cases of sickness reported. The decedent was a white woman, aged 55 years, a native of Tallahassee, Florida. The duration of her illness was 17 weeks. This is the second death from pellagra and the fourth case of the disease reported in Maryland.

December—ERYSIPELAS: Deaths reported, 2, as against 3 in November. Both of the decedents were white females. No cases of sickness reported, as compared with 4 in November.

December—MENINGITIS: Six deaths and no cases of sickness reported, as against 7 deaths and 1 case of sickness reported in November. Two of the decedents were white and 4 colored. Five were males and 1 was a female. No epidemic center.

December—MALARIA: One death and no case of sickness reported, as against 2 deaths and no cases of sickness reported in November. The decedent was a white man, 70 years old.

December—SEPTICEMIA: Four deaths and no cases of sickness reported, as against 6 deaths and no cases of sickness reported in November. Two of the decedents were males and 2 females; all were white. One was a white male infant, aged 15 days.

December—GERMAN MEASLES: No deaths and 2 cases of sickness reported, as against no deaths and 1 case of sickness reported in November. Both of the morbidity cases were white infants, 1 male and 1 female. No epidemic center.

December—PELLAGRA: No deaths and no cases of sickness reported, as against one death and no cases of sickness reported in November.

TABLE XXX.

REPORTED CASES AND DEATHS FROM COMMUNICABLE DISEASES—RURAL MARYLAND, 1909.

	January	February	March	April	May	June	July	August	September	October	November	December	Total Jan. 1 Dec. 31
Tuberculosis.....	**102**	**99**	**111**	**109**	**98**	**104**	**113**	**80**	**54**	**64**	**96**	**88**	**1118**
	*	*	*	*	*	*	*	*	*	*	*	*	*
Measles..........	**12**	**12**	**11**	**14**	**9**	**7**	**2**	**2**	**1**	**3**	**0**	**6**	**79**
	195	472	463	332	271	196	128	28	37	120	134	95	2471
Whooping-Cough.	**6**	**3**	**7**	**5**	**16**	**12**	**10**	**18**	**13**	**9**	**6**	**13**	**118**
	22	8	100	2	38	22	31	24	35	21	13	39	355
Scarlet Fever....	**1**	**4**	**1**	**5**	**2**	**0**	**0**	**0**	**2**	**1**	**1**	**4**	**21**
	96	49	70	27	14	22	23	23	42	56	101	65	588
Typhoid Fever...	**12**	**9**	**8**	**10**	**8**	**11**	**30**	**48**	**52**	**49**	**40**	**17**	**294**
	72	21	25	25	31	62	358	401	432	291	178	81	1977
Diphtheria.......	**13**	**6**	**11**	**8**	**4**	**3**	**3**	**2**	**9**	**9**	**12**	**9**	**89**
	72	46	40	43	23	20	22	36	45	106	101	60	614
Influenza.........	**21**	**19**	**42**	**46**	**18**	**10**	**4**	**2**	**4**	**0**	**6**	**7**	**179**
	0	3	0	13	4	1	0	0	0	0	0	0	21
Chicken-Pox.....	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
	47	45	21	11	5	5	2	27	3	7	17	39	229
Mumps	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	18	12	24	16	8	8	2	0	2	1	0	0	91
Small-Pox	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	0	1	8	0	0	0	0	0	3	0	4	16
German Measles.	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	3	5	0	2	0	0	1	3	3	3	1	0	21
Malaria..........	**0**	**3**	**1**	**1**	**2**	**2**	**1**	**1**	**3**	**2**	**2**	**1**	**19**
	0	0	0	0	0	0	0	0	4	1	0	0	5
Other Diseases.....	....	....	....	....	....	....	....	....	....	....	†		
Total of twelve..	**167**	**155**	**193**	**199**	**158**	**149**	**163**	**153**	**138**	**137**	**163**	**145**	**1920**
	525	601	744	479	394	336	567	542	603	609	545	383	6388

Deaths are in bold-face type; reported cases are in ordinary type.

* Reported cases separately compiled.

† One fatal case of pellagra in Baltimore County.

In addition to the one death from pellagra, there also occurred throughout the counties of Maryland 94 deaths from meningitis, 42 from septicemia, 17 from erysipelas and 1 from ophthalmia neonatorum. These make a total of 155 deaths from presumably infectious diseases not included in the above table.

In addition to the above 6,388 cases of contagious and infectious diseases, there were reported 58 cases of impetigo contagiosa, 18 cases of erysipelas, 6 of meningitis, 3 of septicemia and 2 of catarrhal conjunctivitis, making a total of 6,475.

TABLE XXXI.

Cases of Typhoid Fever on Watersheds, 1909.

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	To'l.
Potomac River..	24	4	19	7	10	20	58	72	105	83	56	35	493
Patapsco River..	22	..	..	3	5	8	15	58	81	41	15	5	253
Patuent River....	..	1	2	..	1	2	20	24	10	8	3	10	81
Sus'hanna River.	..	..	..	..	..	1	..	3	3	..	..	..	7
Herring Run....	..	4	1	..	2	..	..	1	7	5	1	..	21
Baltimore City Water System—													
Gunpowder River Watershed....	1	1	..	1	..	..	1	10	8	4	..	..	26
Lake Roland Watershed....	..	..	..	..	..	..	2	17	5	2	..	..	26
Total.........	47	10	22	11	18	31	96	185	219	143	75	50	907

REPORTS OF
County and Town Boards of Health.

Reports of County Health Officers.

ALLEGANY COUNTY.

Dr. C. H. Brace, Health Officer, Cumberland. No Report.

ANNE ARUNDEL COUNTY.

Dr. J. J. Murphy, Health Officer, Annapolis. No Report.

Anne Arundel County—*First Precinct, Fifth District*

Brooklyn, Md., Dec. 9, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health, Baltimore.

Dear Sir: I respectfully submit the following report from December 1, 1908, to December 1, 1909: Cases reported: Scarlet fever, 2; typhoid fever, 4; measles, 8; chickenpox, 1; tuberculosis, 3; diphtheria, 1; whooping-cough, 4. Births reported, 55; deaths, 52.

Chas H. Brooke, M. D., Health Officer,
Fifth District, Anne Arundel County, Md.

Anne Arundel County—*Third Precinct, Fifth District.*

Dr. Thos. B. Horton, Health Officer, South Baltimore.

No Report.

BALTIMORE COUNTY.

County Health Officer's Report.

Towson, Md., May 27, 1910.

Dr. Marshall Langton Price,
Secretary State Board of Health,
10 *South Street, Baltimore, Md.*

Dear Dr. Price: In accordance with the law which requires that I shall make an annual report to the Honorable State Board of

Health, I herewith transmit same for Baltimore county for the year ended December 31, 1909.

The Sanitary Law for Baltimore county, which requires that I maintain an office at Towson, where the records for the county are kept and tabulated, has not been in existence two years; therefore, it is impossible to make any comparison with former years.

During the period covered by this report 1,720 deaths have been recorded, divided into causes of same, sex and race, as shown by the tabulated statement herewith attached. The greatest mortality was during the first twelve months of life, the next greatest between 60 and 70 years. There were 59 causes of death set forth in the statement, of which tuberculosis, pneumonia and infantile diseases have a prominent place.

Age at death are as follows: 0 to 1 year, 425; 1 to 5 years, 116; 5 to 10 years, 30; 10 to 20 years, 65; 20 to 30 years, 105; 30 to 40 years, 150; 40 to 50 years, 138; 50 to 60 years, 166; 60 to 70 years, 207; 70 to 80 years, 194; 80 to 90 years, 105; 90 and over, 19.

The number of births reported for this period was 1,324, this being very incomplete, as there were more births than deaths. This office has been most vigilant in urging upon physicians to report births, but I feel that not over 50 per cent. of births that have really occurred in the county during the time mentioned have been sent to this office. I had hoped that the last General Assembly would attach a fine for non-reporting of births, as it is impossible as the law now stands to get an accurate return of births.

During the year 1909 there were 202 deaths from tuberculosis, as follows: 101 males, 101 females, 140 American born, 21 foreign born, 41 colored; youngest, 7 months—colored female; duration of illness, 4 months; oldest, 87 years, American born male; duration of illness, 3 years; briefest period of illness, 1 week—white male, aged 10 years; longest period, 25 years—white female, aged 58 years. Thus it will be seen that the "white plague" is still king. In addition to this, many die from tuberculosis where cause of death is given by such vague statements as gastro-enteritis, chronic bronchitis, etc. Physicians who neglect getting prophylactic supplies for their tubercular patients, or who fail to notify the State Board of Health of cases plainly tubercular, under their care, too often fail to state death as caused by tubercular troubles, lest their neglect would require an explanation to the State Board of Health. If every responsible physician would use his best efforts to uncover these victims of the "white plague" and use the prophylactic supplies, I am fully convinced that more could be done to eradicate tuberculosis by private physicians than can be accomplished by all the institutions in the State, useful as these institutions are.

There were 1,297 cases of infectious diseases reported during the period which this report covers, and 156 deaths from same causes.

The law regulating infectious diseases in this county is being fully enforced, and the number of deaths annually is decreasing, but still further reduction in the death rate can be effected if all physicians are prompt in making returns to the district Health Officer.

Deaths by infectious diseases are as follows: Typhoid fever, 38—14 male, 24 female, 35 white, 3 colored; scarlet fever, 3—2 male, 1 female, 3 white; measles, 6—3 male, 3 female, 5 white, 1 colored; whooping-cough, 18—8 male, 10 female, 15 white, 3 colored; diphtheria, 12—6 male, 6 female, 12 white; influenza (la grippe), 22—9 male, 13 female, 13 white, 4 foreign, 5 colored; septicemia, 8—2 male, 6 female, 6 white, 2 foreign; erysipelas, 6—4 male, 2 female, 5 white, 1 foreign; cerebro-spinal meningitis, 10—4 male, 6 female, 9 white, 1 colored; simple meningitis, 24—18 male, 6 female, 21 white, 3 colored; tubercular meningitis, 9—5 male, 4 female, 8 white, 1 colored; malaria, 1; pellagra, 1.

Baltimore county has, in all, 15 districts. During the year I have visited most of these districts for questions affecting general sanitation.

The rapid development of the suburbs makes work of the office of County Health Officer exacting, and much work is required of the Health Officer in suburban districts to correct evils growing out of this rapid growth of the county.

STATEMENT OF DEATHS FOR YEAR ENDING DECEMBER 31, 1909.

	Total.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Male	916	88	71	87	78	69	64	93	96	59	75	65	71
Female	804	89	58	66	73	61	58	86	84	51	67	51	60
White, Amer...	1,262	137	89	110	111	97	85	133	131	88	100	88	93
White, foreign.	224	24	23	18	20	18	17	17	20	11	26	11	19
Colored	234	16	17	25	20	15	20	29	29	11	16	17	19
Total........	1,720	177	129	153	151	130	122	179	180	110	142	116	131

CAUSES.

	Total.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Tuberculosis	202	23	21	24	23	19	15	21	12	8	11	13	12
Typhoid Fever	38	5	..	1	..	1	..	6	3	7	8	3	4
Scarlet Fever	3	..	..	..	..	1	..	..	1	..	..	..	1
Measles	6	1	2	..	..	1	1	..	1	..	..	..	..
Whooping-cough	18	..	..	..	..	..	2	4	4	4	1	2	1
Diphtheria	12	2	..	2	2	2	1	..	1	..	2	..	..
La Grippe	22	2	4	6	6	1	..	..	..	1	..	1	1
Septicemia	8	1	..	..	..	..	1	..	1	..	1	4	..
Erysipelas	6	..	..	1	..	..	..	..	1	1	1	1	1
Meningitis, C.-S	10	2	1	..	..	1	..	1	1	..	..	3	1
Meningitis, Tub.	9	2	..	..	..	1	..	1	..	3	..	2	..
Meningitis, Sim.	24	1	1	3	2	1	4	5	3	1	1	1	1
Tetanus	3	..	..	..	..	..	..	..	1	..	2	..	..
Cancer	62	9	3	4	9	4	6	5	5	2	6	7	2
Rheumatism	7	..	..	..	..	2	1	1	..	..	2	1	..
Diabetes	10	..	..	..	..	3	2	3	2	..	..	..	..
Cer.Hemorrhage	37	..	2	3	2	7	1	4	3	3	7	2	3
Paralysis	57	4	9	8	1	9	1	4	6	4	3	2	6
Heart Disease.	133	20	8	15	18	7	8	8	5	7	14	10	13
Bronchitis	24	8	2	1	1	5	1	..	..	1	1	2	2
Broncho-Pneum.	16	..	..	..	..	2	1	2	4	1	3	3	..
Pneumonia	161	33	23	30	22	7	6	4	4	5	3	9	15
Hemorrhage	12	..	..	1	..	..	2	1	4	2	1	1	..
Pul. Congestion	12	..	3	4	3	..	..	..	..	1	..	1	..
Intestinal, adults	21	3	2	..	1	1	1	1	3	2	..	2	5
Gastritis	8	..	..	..	..	1	3	1	1	1	..	..	1
Appendicitis	5	..	..	2	..	..	1	..	..	1	..	1	..
Peritonitis	9	1	..	..	1	1	2	..	1	..	..	2	1
AcuteIndigest'n.	21	1	2	1	..	1	2	6	2	4	2	..	..
Cirrhosis of Liver	13	..	..	..	..	6	1	..	3	2	..	1	..
Bright's Disease	136	13	13	10	17	11	12	5	18	6	13	5	13
Apoplexy	36	4	3	3	6	2	3	4	3	..	4	2	2
Alcoholism	8	..	..	..	..	1	2	..	1	2	1	1	..
Old Age	70	7	5	3	8	3	2	8	5	7	10	5	7
Cardiac Syncope	11	..	..	..	..	4	2	1	1	1	..	1	1
INFANTS, Intest.	106	10	1	6	6	..	4	31	23	10	11	2	2
Debility	33	..	..	..	..	3	7	1	4	6	9	1	2
Convulsions	23	..	..	..	2	5	4	3	1	2	1	5	..
Chol. Infant.	31	..	..	..	..	1	4	16	8	1	1	..	..
Marasmus	42	1	1	..	1	1	1	11	7	6	5	5	3
Still Births	45	4	3	4	2	5	2	8	6	2	4	2	3
Prem. Births.	48	5	3	4	4	6	5	2	6	1	3	2	7
Accidents	74	8	8	4	5	2	2	3	15	3	7	7	10
Murder	9	..	..	1	3	1	1	1	1	..	..	..	1
Suicide	21	..	..	5	1	..	1	4	4	2	1	1	2
Brain Trouble.	4	1	..	1	..	..	1	..	1	..	..	..	..
Convulsions	4	..	3	..	1	..	..	..	..	..	..	..	..
Asthma	2	..	1	1	..	..	..	..	..	..	..	..	..
Epilepsy	4	..	1	1	1	..	..	..	..	..	..	1	..
Gen. Anæmia	6	..	1	1	..	..	..	..	2	..	..	..	2
Malarial Fever	1	..	..	..	..	..	1	..	..	..	..	..	..
Pellagra	1	..	..	..	..	..	..	..	..	..	..	1	..
Pleurisy	2	..	..	..	..	..	..	1	1	..	..	..	..
Mania and other causes	33	6	3	3	3	5	5	1	1	..	3	1	6
Total	1,720	177	129	153	151	130	122	179	180	110	142	116	131

INFECTIOUS DISEASES REPORTED FOR YEAR ENDED DECEMBER 31, 1909.

	Total.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Typhoid Fever.	239	11	4	3	2	5	1	22	63	68	35	21	4
Scarlet Fever..	84	4	12	20	1	4	2	4	4	7	9	12	5
Measles	612	114	191	79	101	86	23	3	7	1	3	3	1
Diphtheria	112	16	15	14	15	12	10	5	2	5	7	6	5
Whooping-cough	96	1	2	3	1	18	7	10	12	21	..	2	19
Chickenpox	83	19	16	8	2	3	2	..	23	..	6	4	..
Mumps	4	..	..	..	..	2	1	..	..	1	..	..	..
Erysipelas	5	..	..	..	1	..	..	..	..	..	1	3	..
Impetigo Contag.	54	50	4	..	..	..	..	..	..	..	..	..	..
Meningitis	7	1	..	6	..	..	..	..	..	..	..	..	..
Smallpox	1	..	..	..	..	..	..	..	..	..	1	..	..
Total........	1,297	216	244	133	123	130	46	44	111	103	62	51	34

BIRTHS REPORTED FOR YEAR ENDING DECEMBER 31, 1909.

	Total.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Male	715	67	66	63	61	53	47	56	60	65	56	63	58
Female	609	54	58	46	42	49	48	45	59	50	58	57	43
White	1,185	107	117	98	86	93	85	93	102	104	102	109	89
Colored	139	14	7	11	17	9	10	8	17	11	12	11	12
Total.......	1,324	121	124	109	103	102	95	101	119	115	114	120	101

MISCELLANEOUS ITEMS REPORTED FOR YEAR ENDED DECEMBER 31, 1909.

	Total.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Houses disinf't'd	155	17	24	14	16	11	21	10	8	4	8	12	10
Rooms disinf't'd	359	37	42	26	41	25	44	35	21	14	23	30	21
Water and Milk analyzed.....	45	4	1	..	1	..	6	1	17	8	5	..	2
Nuisances abated	222	5	6	9	14	30	32	38	32	17	17	15	7

Respectfully submitted,

James F. H. Gorsuch,

Baltimore County Health Officer and
Secretary to Board of Health for Baltimore County.

BALTIMORE COUNTY—First District.

Catonsvlle, Md., December 1, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health.

Dear Doctor: In accordance with Section 13 of Article 43 of the Code of Public General Laws of Maryland, I submit herewith my annual report for 1909, year ended November 30, for the First Election District of Baltimore county.

We have just gone through the year with only one epidemic, and that of measles, which was widespread through the district, there being 210 cases reported, with 3 deaths.

During the year 33 houses and 69 rooms were disinfected for contagious and infectious diseases. Eight samples of water were analyzed, and in each case the analysis showed the water unfit for drinking.

There were 87 nuisance complaints made, the majority of the complaints being about drainage and cesspools.

An undertaker was arrested and convicted for the removal of a dead body without first obtaining a permit.

The birth record and contagious disease reports are not as complete as they should be, as there are a few physicians who do not report all of their cases.

There were 279 cases of infectious and contagious diseases reported, as table herewith shows, not including tuberculosis, which is reported direct to the State Board of Health.

CONTAGIOUS AND INFECTIOUS DISEASES REPORTED FROM DECEMBER 1, 1908, TO NOVEMBER 30, 1909, IN THE FIRST ELECTION DISTRICT, BALTIMORE COUNTY, MD.

	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Total.
Diphtheria	3	..	..	1	..	..	2	1	..	..	1	..	8
Typhoid Fever	..	..	..	..	1	..	1	1	5	5	1	..	14
Varicella	1	1	6	4	..	3	2	23	..	..	..	..	40
Scarlet Fever	..	..	..	..	..	..	..	..	1	..	..	1	2
Measles	7	76	87	28	7	5	6	..	..	..	...	..	210
Pertussis	..	..	..	..	..	..	..	4	..	1	..	..	5
Total													279

Births reported in First Election District: White, 103—male 50, female 53; colored, 27—male 17, female 10. Living births, 125; still-born, 5; twins, 1; total, 130.

Deaths: There were 193 deaths, including 41 deaths occurring in the various institutions in this district. There were 163 natives; 24 foreign born and 6 the nationality unknown. Of these 152 were white—77 males, 75 females; 40 colored—27 males, 13 females, and 1 color unknown, making 102 males, 90 females and 1 sex not known.

There was 1 accidental death, 4 suicides and 15 coroner's inquests and post-mortems. There were 196 burial permits, 14 transportation permits and 2 disinterment permits issued during the year.

Ages at Death.	No.	Ages at Death.	No.
0 to 5 years.......	47	50 to 55 years.......	4
5 to 10 years.......	1	55 to 60 years.......	15
10 to 15 years.......	1	60 to 65 years.......	13
15 to 20 years.......	8	65 to 70 years.......	12
20 to 25 years.......	5	70 to 75 years.......	16
25 to 30 years.......	3	75 to 80 years.......	12
30 to 35 years.......	10	80 to 85 years.......	10
35 to 40 years.......	9	85 to 90 years.......	6
40 to 45 years.......	9	90 to 95 years.......	4
45 to 50 years.......	8		
Total..			193

The causes of death were as follows: cancer of uterus, 3; cancer of stomach, 4; cancer of breast, 2; cancer, situation not given, 3; congenital cardiac disease, 1; endo-carditis, 1; heart failure, 1; fatty degeneration of heart, 1; mitral regurgatation, 6; aortic insufficiency, 1; myocarditis, 1; valvular heart disease (variety not given), 3; cerebral hemorrhage, 10; acute indigestion, 6; cirrhosis of liver, 1; pistol-shot wound of head, 3; pulmonary œdema, 5; pulmonary tuberculosis, 21; general tuberculosis, 2; unknown, 2; tuberculosis of intestines, 1; bronchitis, 3; senility, 14; intestinal obstruction, 2; still-born, 5; drowning, 2; broncho-pneumonia, 7; cerebral syphilis, 1; teething, 1; measles, 3; carbolic acid poisoning, 1; acute ptomaine poisoning, 1; erysipelas, 1; internal hemorrhage, 1; post-partum hemorrhage, 1; cerebral effusion, 1; uræmic coma, 1; general paresis, 1; peritonitis, 1; strangulated hernia, 1; whooping-cough, 1; lobar pneumonia, 7; asthma, 10; chronic Bright's disease, 15; premature birth, 5; tuberculosis of kidney, 1; hypostatic pneumonia, 1; strangulation by hanging, 1; tuberculosis of stomach, 1; la grippe, 1; status epilepticus, 1; diabetes, 4; hydrocephalus, 1; electric shock, 1; empyæmia, 1; renal abscess, 1; pernicious anæmia, 1; rheumatism, 1; arteriosclerosis, 2; inanition, 1; brain softening, 1; typhoid fever, 2; cholera infantum, 5; cerebral thrombosis, 1; acute dysentery, 1; icterus neanatorum, 1. Total, 193.

Respectfully submitted,
ARTHUR H. MANN, JR., M. D.,
Health Officer, First Election District.

BALTIMORE COUNTY—*Second District.*

DR. H. F. SHIPLEY, Health Officer, Granite. No report.

BALTIMORE COUNTY—*Third District.*

DR. HENRY A. NAYLOR, Health Officer, Pikesville. No report.

BALTIMORE COUNTY—*Fourth District.*

DR. H. M. SLADE, Health Officer, Reisterstown. No report.

BALTIMORE COUNTY—*Fifth District.*

DR. D. M. RESH, Health Officer, Hampstead, R. F. D. No report.

BALTIMORE COUNTY—*Sixth District.*

DR. J. B. NORRIS, Health Officer, Beckleysville. No report.

BALTIMORE COUNTY—*Seventh District.*

DR. E. W. HEYDE, Health Officer, Parkton. No report.

BALTIMORE COUNTY—*Eighth District.*

DR. T. ROSS PAYNE, Health Officer, Corbett. No report.

BALTIMORE COUNTY—*Ninth District.*

DR. R. C. MASSENBURG, Health Officer, Towson. No report.

BALTIMORE COUNTY—*Tenth District.*

DR. J. T. PAYNE, Health Officer, R. F. D. No. 1. No report.

BALTIMORE COUNTY—*Eleventh District.*

DR. JAS. F. H. GORSUCH, Health Officer, Fork P. O. Included in County Health Officer's report.

BALTIMORE COUNTY—*Twelfth District.*

DR. WM. E. McCLANAHAN, Health Officer, Highlandtown. No report.

BALTIMORE COUNTY—*Thirteenth District.*

DR. FRANK RUHL, Health Officer, Lansdowne. No report.

BALTIMORE COUNTY—*Fourteenth District.*

DR. W. N. CLAYTON, Health Officer, Overlea. No report.

BALTIMORE COUNTY—*Fifteenth District.*

DR. JOHN W. HARRISON, Health Officer, Middle River. No report.

CALVERT COUNTY.

Dr. Estep Paddy, Health Officer, Parran. No report.

CAROLINE COUNTY.

Dr. Enoch George, Health Officer, Denton. No report.

CARROLL COUNTY.

Dr. Chas. R. Foutz, Health Officer, Westminster. No report.

CECIL COUNTY.

Dr. H. Arthur Mitchell, Health Officer, Elkton. No report.

CHARLES COUNTY.

Waldorf, Md., January 15, 1910.

Dr. Marshall Langton Price,
Secretary State Board of Health, Baltimore.

Dear Sir: As custom requires, I herewith submit my report for the year 1909. At the present time this county is in a healthy condition. During the year typhoid fever has prevailed to a certain extent in some localities. Diphtheria, measles, whooping-cough and chickenpox have bothered the Health Officer not a little, though not epidemic in any neighborhood. Consumption, that dreaded disease, still prevails, 34 cases having been reported in the county since June last. Houses where consumption has occurred, as well as all others where the law requires, have been thoroughly disinfected. Two cases of smallpox occurred at Pomonkey Point during the fall of 1909, but a strict quarantine prevented a spread of the disease. I take the present opportunity to thank you for the many courtesies and kind advice, which has been very helpful to the Health Officer during the past year. Very respectfully,

G. O. Monroe.

DORCHESTER COUNTY.

Cambridge, Md., January 15, 1910.

Dr. Marshall Langton Price,
Secretary State Board of Health.

Dear Sir: I herewith submit to you my report for the period of six months. I have been Health Officer from July 1, 1909 to December 31, 1909. The work of collecting vital statistics is going on very satisfactorily. I have no complaint to make of any physician in the county, as I receive full and complete reports from them promptly each month. During the six months I have received and recorded birth and death certificates as follows:

Births..........	White 216	Colored 102	Total 318
Deaths.........	White 143	Colored 95	Total 238

The prominent causes of death were as follows in 186 cases, the remaining 52 I could not classify:

Chronic Nephritis	29	Gastro Enteritis	4
Typhoid Fever	18	Cirrhosis of Liver.............	1
Tuberculosis	27	Cerebral Hemorrhage	4
Valvular Heart Disease........	12	Diabetes	1
Cancer	3	Senilitis	7
Pneumonia	7	Drowned	2
Appendicitis	4	Paralysis	3
Inanition	12	Homicide	2
Cholera Infantum	10	Apoplexy	1
Enterocolitis	15	Accident	2
Arteriosclerosis	2	Still-Born	5
Tetanus	2	Unknown causes	10

During the period of six months covered by this report there have been 27 deaths from tuberculosis. I have fumigated personally 21 houses; the remaining 6 were situated 30 miles from Cambridge, and were fumigated by the physician in that quarter by my authority. The physicians have reported deaths from tuberculosis to me very promptly, which enables me to fumigate the house the day of the funeral, and, as I issue all burial permits personally for this district, I am able to keep close watch on all deaths, and by this method I get information quickly of a death from tuberculosis and can thereby fumigate promptly.

I have issued 115 burial permits during the period covered by this report.

I fear the physicians as a body are not having their tubercular patients' sputum examined and using the supplies; some are doing it faithfully and constantly, calling for supplies almost weekly; some never have made application for a bundle.

During July I was called to investigate an epidemic of typhoid fever at Toddville, situated 30 miles from Cambridge. I found 27 cases within a quarter of a mile. I had specimens of drinking water collected from several water barrels, and had them examined by your office; they were all reported bad. I notified the physician of the report, and ordered all the barrels from which reports were bad sealed up.

Typhoid fever prevailed quite extensively all summer in the lower part of the county. I had expressions from several physicians as to the cause and spread; they all seem to place the blame on flies as the carriers of the contagion.

There has been very little malaria reported.

There has been one case of smallpox in the county this year. On December 7 the patient, a colored man, called at Dr. Goldsborough's office, seeking treatment for an eruption on his face and hands. Dr. Goldsborough made a diagnosis of smallpox and sent the patient home and notified the Health Officer. I immediately quarantined his home, closed the school and church at Cordtown, where he lived, and vaccinated all the inhabitants of the settlement. As soon as I saw the man, I notified your office, and Dr. Rohrer, of the State Board of Health, made an official diagnosis. The patient recovered in two weeks, after which I fumigated the entire house. No other cases developed.

I have not been called to suppress any nuisance.

The law on vaccination has been rigidly observed. At my suggestion, the County Commissioners appointed regular vaccine physicians in different districts in the county, thereby avoiding some unpleasantness that was existing regarding payment for this work. Personally, I had 37 schools on my list, which included both white and colored. During my visits to the schools I vaccinated 234 pupils. The work was carefully systematized before school opened by taking the matter up in conjunction with the School Board, the president, Mr. John G. Mills, giving me valuable assistance in reaching the teachers. The latter I found always willing to assist me and observing the law. I only found one who was not so, and, after pointing out the law, she made all not vaccinated go to their physician and have it done.

The physicians are reporting their infectious diseases promptly and carefully, and I feel confident I receive a full report of them.

Respectfully submitted,

Chas. M. Hanby, M. D.,
County Health Officer.

FREDERICK COUNTY.

Dr. C. F. Goodell, Health Officer, Frederick. No report.

HARFORD COUNTY.

Dr. Marshall Langton Price,
Secretary State Board of Health.

Dear Sir: I hereby submit report of local health conditions in Harford county for year ended January 1, 1910.

At this time the general health of the county is good, except one case of scarlet fever and one of diphtheria at or near Joppa, Md. The county is generally in a good sanitary condition, except the drains in the town of Belair. These I have tried to have improved, but in vain. I even brought this matter to the attention of the grand jury, but no action was taken.

I have recorded 210 births and 353 deaths. The reason for so small a number of births is that several of the Physicians are very slow to report births, as well as infectious diseases. I have fumigated 38 houses for tuberculosis, 2 for scarlet fever, 7 for diphtheria, and also one schoolhouse for diphtheria. I have inspected several nuisances and had them corrected.

Yours respectfully,
W. B. Kirk,
Health Officer for Harford County.

HOWARD COUNTY.

Ellicott City, Md., January 16, 1910.

Dr. Marshall Langton Price,
Secretary State Board of Health.

Dear Doctor: The general health of Howard county during the year 1909 has been good. I have had two schools closed, and thus avoided epidemics of scarlet fever and diphtheria. The School Board has supplied itself with a fumigation outfit, which is sent from school to school. Fumigation in houses where there has been a death from a contagious or infectious disease has been performed by the undertakers of the county before funeral, and this I call to done, and under the old regime it was done by the Health Officer, your especial attention, for it is the proper time for this work to be who often would not hear of the case until the end of the month. All of our indigent insane get the best care possible. The white cases go to Springfield and Spring Grove, and the colored to Frederick. Senator A. P. Gorman attended one of the Howard county medical meetings and gave us his opinion that all would be under State care as soon as possible.

There has been the usual number of complaints of various kind, all of which have been corrected without litigation.

I have drawn up a bill for the 1910 Legislature which, if enacted, will place Howard county's health regulations in very good condition.

Respectfully,
W. C. Stone.

KENT COUNTY.

Dr. H. G. Simpers, Chestertown. No report.

MONTGOMERY COUNTY.

ROCKVILLE, MD., October 1, 1909.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health, Baltimore.

Dear Sir: This report embraces the period between October, 1908, and October, 1909.

Births	White 391	Colored 120	Total 511
Deaths	White 181	Colored 108	Total 289

The births are 222 in excess of the deaths. This is a smaller gain than that of last year, when 245 was the excess.

The colored race only made a gain of 12 in excess of their death rate, while the white race made a gain of 210.

This indicates a fearful mortality among the colored people of this county. Roughly computing, they make up about a quarter of the population of the county, yet death visits them four times as frequently as the white people.

Among the principal causes of death were the following:

Pleurisy	2	Apoplexy and Paralysis	34
Pneumonia	17	Kidney Disease	29
Cancer	12	Accident and Violence	25
Whooping-cough	8	Tuberculosis	58
Scarlet Fever	2	Diphtheria	1
Typhoid Fever	6		

I must again draw attention to the increase of tuberculosis in the county. Last year it was computed that one death in nearly every six was due to it; this year there is an increase—one death in nearly every five due to it. All of this in face of the fact that more intelligent efforts have been made to overcome the ravages of "the great white plague"—but we have not done our duty, our full duty, as is shown by the mortality during the year. That this disease is more prevalent among the colored population than the white is proven by the fact that one death of every three and two-thirds that occurred among the blacks last year was due to tuberculosis. One death in every six and one-thirtieth among the whites during the same period was due to the same cause. If figures are of any account in estimating the ravages of this disease, I will call your attentoin to the fact that tuberculosis was 58 times more deadly than the dreaded diphtheria in this county during the year.

The Health Officer has been called during the year to visit Kensington, Gaithersburg, Silver Spring, Forest Glen, Cabin John, Chevy Chase, Norfolk, Bethesda, Washington Grove and various intermediate points. There were three schools closed during the year on account of diphtheria—one at Bethesda, one at Gaithersburg and one at Browningsville. No fatalities.

Yours respectfully,

CLAIBORNE H. MANNAR.

PRINCE GEORGE'S COUNTY.

Dr. John E. Sansbury, Health Officer, Forestville. No report.

QUEEN ANNE'S COUNTY.

Dr. A. E. Landers, Health Officer. No report.

SOMERSET COUNTY.

Dr. T. Jacob Smith, Health Officer. No report.

ST. MARY'S COUNTY.

Dr. Thomas Lynch, Health Officer. No report.

WASHINGTON COUNTY.

Hagerstown, Md., Sept. 30, 1910.

Marshall L. Price, M. D.,

Secretary State Board of Health, Baltimore, Md.

Dear Doctor: I beg to report that during the year May 1, 1909, to April 31, 1910, fairly satisfactory progress has been made in the work of collecting vital statistics.

I have received returns from all the physicians in the county except five, midwives reporting promptly. I feel that the work is becoming more systematized than heretofore.

EXPENSE ACCOUNT SHEET FROM MAY 1, 1909, TO APRIL 30, 1910.

Vaccination	$385.00
Placarding	28.00
Dr. J. E. Pitsnogle, Health Officer	500.00
Dr. H. E. Tabler, fumigating	45.00
Drugs and diphtheria antitoxin	135.00
Dr. E. H. Gaither, fumigation	47.00
Dr. V. M. Reichard	35.00
H. E. Stover, supplies, Health Officer	5.00
Rent for Health Officer	96.00
H. K. Startzman, P. M., postage	8.00
Express company and stages	7.93
Telephone and long-distance	20.00
Dr. C. D. Baker, fumigation	25.00
Dr. C. T. Mason, fumigation	25.00
Printing and post cards	100.00
Dr. J. E. Pitsnogle, general expense	558.20
Salaries of members of Health Board	300.00
	$2,320.13

During the year I have received and recorded birth and death certificates as follows:

Death certificates	795
Birth certificates—girls 516, boys 546	1,062

The following diseases were reported:

Diphtheria	38	Scarlet Fever	38
Measles	256	German Measles	2
Typhoid Fever	112	Chickenpox	69
Whooping-cough	7	Pneumonia	45
Mumps	47	Erysipelas	8
Meningitis	2		
Total morbidity			624

Each of these contagious diseases necessitated the writing by the Health Officer of two postal cards, one notifying the Board of School Commisioners and the other notifying the Washington County Free Library. I wrote 600 postals for names of children reported to me without names, amounting to 1,734 postal cards.

The Health Officer issued of the prophylactic supplies 49 original and 80 renewal packages, under the Tuberculosis law. As a rule, the physicians and laity are complying with the requirements of the Tubercular law by notifying me of the removals of tubercular patients when homes are vacated.

During the year I fumigated 79 houses and apartments vacated by tubercular patients, 26 houses in which scarlet fever existed, 22 houses in which diphtheria existed. This sum total does not include the houses fumigated for contagious diseases in five rural districts, the work in these districts being done by five assistants, receiving instructions from me in every case of contagious disease to fumigate, and I know the same was done, since the charges were sworn to and the accounts were passed on by me.

The physicians of this county are to be complimented upon the promptness with which they reported contagious diseases. The State Sanitarium has also rendered this office very valuable service in reporting promptly the houses vacated by tubercular patients when those patients enter the State Sanitarium.

This office served 50 notices in the county to abate nuisances, and all were complied with. In all 85 nuisances were abated.

There were 118 disinterment permits issued. One prosecution and conviction, with a fine of $12.70, for violating the Disinterment law. There were four prosecutions and convictions for violating the Burial Permit law.

The Health Officer has visited nearly all the towns in the county and made a personal inspection of the sanitary conditions of those towns. He has also visited many schools in the county to personally know the condition of the building and outhouses. I found very few properly ventilated, in fact some not fit to house children, and many overcrowded.

The slaughter-houses throughout the county in general were inspected; four prosecutions and convictions; three paid fines of $12.50 each, and one served sentence in jail for selling calves to butchers under three weeks old (these were seven days old). The calves were confiscated by the Health Officer.

During the year—in February, 1910—we had, by the assistance of the State Board of Health, quarantine established against Berkeley Spring and Morgan county, West Virginia, for 12 days, which necessitated my making five trips to Hancock, Md , and one trip to Berkeley Spring, in company with Dr. C. W. G. Rohrer, to see if Berkeley Spring really had smallpox. We saw two cases. Dr. Rohrer said: "We will go into the houses and see for ourselves." My, but that was a pill for me to swallow! but I swallowed, it and in we went. Dr. Rohrer did not know how hard it was to swallow, but we took our medicine and did not get the pox either.

MILK.

The marketable milk for Hagerstown was examined once during the year, and found, with a few exceptions, up to the standard. No preservatives were found in any of it. The lesson taught the dairymen in 1908, I think, has done some good.

I wish to thank the Dairy Inspector for Washington county for his prompt and efficient work in acting in conjunction with this office. He is the man for the place. I do think the State Live Stock Sanitary Board is very slow to act on a great many cases reported to them by this office. The Dairy Inspector has quarantined 100 head of cows and filed copy of the quarantining with me. The cattle were either killed or removed from the State of Maryland.

WATER.

We took samples of water from Boonsboro, Keedysville, Sharpsburg, Clearspring, Edgemont, Hancock, Hagerstown and the Antietam Creek, where Hagerstown gets her supply of water when the reservoirs are empty. Samples of all bottled waters sold in Hagerstown were taken. These samples were examined during the year.

VACCINATION.

Since my last report I must say all the teachers of the county are complying with the Vaccination law, after some of their members were prosecuted during April, 1909.

CHILD LABOR PERMITS.

During the year there were 300 permits granted. Forty children were rejected on account of education and physical defects. In my opinion, this law is a farce; there is nothing in it, because it has no foundation to stand upon; for example, when I reject an applicant or applicants, they roam the streets and alleys. In my opinion, there should be as a base a compulsory education law; then, when a Health Officer rejects a child on account of education, the proper authorities could see that the child was in school.

MEAT AND FOOD INSPECTION.

Washington county needs a food and meat inspector. Hagerstown needs a public slaughter-house, where all animals must be slaughtered, when any of the meat is to be sold to the public; in fact, all animals should be inspected before and after they are slaughtered.

DISTRICT OFFICERS.

Washington county should have a local Health Officer in every election district, where practical, with the same power as the county Health Officer, working under the county Health Officer. This county is too large for one man to do efficient work. Also, the county Health Officer should be taken out of politics. The officer should be allowed to serve as long as he conducts the office right; when he fails in his duties to the county, dismiss him. He should be put on an annual salary and require him to devote his entire time and attention to the office. Any one filling this office will find plenty to do if he wants to do it.

BOARD OF HEALTH.

The Board of Health for Washington county wishes to thank Dr. Price for his valuable assistance rendered this office and for his many visits to this county to assist the Health Officer. The Health Officer wishes to state that the County Commissioners, sitting as a Board of Health, have rendered valuable assistance to the Health Officer, and the interest they take in the work of health matters is very encouraging.

NEW RECORDS.

This office has established a permanent morbidity and mortality record, which shows how many and the various kinds of contagious diseases reported during the month, whether white males or females, black males or females. The same scheme is used for the mortality and birth records. The birth record shows the sex and color of children born during the month.

CITY HEALTH BOARD

In my opinion, there should be no City Health Board in any town in the county. As a rule, they are inactive and amount to nothing. All should be under one head—the County Board of Health.

The County Commissioners meet on the second Thursday of each month as a Board of Health, and great interest is manifested.

Respectfully submitted,
J. E. Pitsnogle, M. D.,
Health Officer for Washington County.

WICOMICO COUNTY

Salisbury, Md., January 1, 1910.

Dr. Marshall Langton Price,
Secretary State Board of Health, Baltimore.

Dear Doctor: Please find inclosed report from December 1, 1908, to November 30, 1909. There were reported 322 deaths and 382 births. This makes a difference of 60 births over deaths. I feel sure there are more births than this, as in some sections of this county a doctor is very seldom called to an obstetrical case, the people depending on midwives, and many of these will attend a few cases in a year and will deny ever attending a case, unless you happen to find it out. There are others who report their cases regularly. Wicomico county has kept well up in fumigating after contagious diseases and tuberculosis. There are several cases not attended to, but will be looked after promptly, as some of the drives are over 25 miles, and it cannot be expected of the Health Officer to drop everything and take these long drives on the small pay they receive.

The following show the diseases the 322 persons in Wicomico county died from: Tuberculosis, 56; pneumonia, 24; brain fever, 2; unknown, 7; cancer, 3; diarrhœa, 3; railroad accidents, 2; cholera Infantum, 3; eclampsia, 2; enlarged prostate, 2; uterine sarcoma, 1; burns, 1; illeo and entero colitis, 16; lung disease, 1; acute indigestion, 2; acute bronchitis, 1; general emaciation, 1; puerperal hemorrhage, 1; diabetes, 1; embolism, 1; malnutrition, 1; cystic tumor of liver, 1; atrophy of liver, 1; ovarian tumor, 1; chronic nephritis, 1; teething, 1; gangrene, 2; old age, 1; endocarditis, 2; apnœa, 1; marasmus, 7; œdema of lungs, 4; sepsis, 1; capillary bronchitis, 4; accouchement force, 1; inflammatory rheumatism, 1; toxemia, 1; strangulated hernia, 1; sarcoma of liver, 1; dysentery, 2; hemiphlegia, 3; appendicitis, 3; cerebral hemorrhage, 1; insanity, 1; prostration, 1; starvation, 3; angina pectoris, 1; overdose anodyne, 1; hyperemesis, 1; paralysis, 6; gun and pistol wounds, 6; chronic and acute Bright's disease, 8; inanition, 7; strangulation, 1; premature birth, 3; carcinoma of stomach, 1; suffocation, 1; typhoid fever, 18; apoplexy, 1; meningitis, 2; exhaustion, 4; carcinoma of liver, 2; cardiac failure, 14; carcinoma of uterus, 3; infirmities of age, 1; intestinal nephritis, 2; general debility, 1; la grippe, 3; unknown, 1;

dropsy, 1; peritonitis, 5; drowning, 1; dead born, 6; uræmia, 4; congestion of lungs, 1; whooping-cough, 1; meningitis, 1; arteriosclerosis, 5; cerebral abscess, 1; epilepsy, 2; bronchial croup, 1; syphilis, 2; diphtheria, 2; old age, 2; suicide, 4; senility, 2; convulsions, 6.

Yours very truly,

C. R. Truitt, M. D.

WORCESTER COUNTY.

Dr. Paul Jones, Health Officer, Snow Hill. No report.

1909.

LIST OF COUNTY HEALTH OFFICERS.

Allegany	Dr. Chas. H. Brace	Cumberland.
Anne Arundel	Dr. J. J. Murphy	Annapolis.
1st Precinct, 5th Dist.	Dr. C. H. Brooke	Brooklyn.
3d Precinct, 5th Dist.	Dr. T. B. Horton	South Baltimore.
Baltimore County	Dr. James F. H. Gorsuch	Towson.
1st District	Dr. Arthur H. Mann, Jr.	Catonsville.
2d District	Dr. H. F. Shipley	Granite.
3d District	Dr. H. A. Naylor	Pikesville.
4th District	Dr. Harry M. Slade	Reisterstown.
5th District	Dr. D. M. Resh	Hampstead, R. F. D.
6th District	Dr. John B. Norris	Beckleysville.
7th District	Dr. E. W. Heyde	Parkton.
8th District	Dr. T. Ross Payne	Corbett.
9th District	Dr. R. C. Massenburg	Towson.
10th District	Dr. J. T. Payne	Phœnix, R. F. D. 1.
11th District	Dr. James F. H. Gorsuch	Fork.
12th District	Dr. Wm. E. McClanahan	Highlandtown.
13th District	Dr. Frank H. Ruhl	Lansdowne.
14th District	Dr. Wm. F. Clayton	Overlea
15th District	Dr. John W. Harrison	Middle River.
Calvert	Dr. Estep Paddy	Parran.
Caroline	Dr. Enoch George	Denton.
Carroll	Dr. Charles R. Foutz	Westminster.
Cecil	Dr. H. Arthur Mitchell	Elkton.
Charles	Dr. G. O. Monroe	Waldorf.
Dorchester	Dr. Chas. M. Hanby	Cambridge.
Frederick	Dr. C. F. Goodell	Frederick.
Garrett	Dr. Henry W. McComas	Oakland.
Harford	Dr. W. B. Kirk	Darlington.
Howard	Dr. W. C. Stone	Ellicott City.
Kent	Dr. H. G. Simpers	Chestertown.
Montgomery	Dr. C. H. Mannar	Rockville.
Prince George's	Dr. John E. Sansbury	Forestville.
Queen Anne's	Dr. A. E. Landers	Crumpton.
Somerset	Dr. T. Jacob Smith	Princess Anne.
St. Mary's	Dr. Thomas Lynch	Leonardtown.
Talbot	Dr. E. R. Trippe	Easton.
Washington	Dr. J. E. Pitsnogle	Hagerstown.
Wicomico	Dr. Chas. R. Truitt	Salisbury.
Worcester	Dr. Paul Jones	Snow Hill.

Reports of Town Health Officers.

ABERDEEN.

Aberdeen, Md., Jan. 1, 1910.

Dr. Marshall L. Price, *Baltimore, Md.*

Dear Sir: I herewith hand you my report for the year ended December 31, 1909:

Typhoid Fever—White male, 6 years old, recovered; white male, 45 years old, recovered; white female, 12 years old, recovered; white female, age not given, recovered; white female, 2 years old, recovered; white female, 31 years old, recovered; white male, 4 years old, recovered.

Diphtheria—White female, 27 years old, recovered.

Whooping-cough—White male, 1 year old, recovered..

Chickenpox—White male, 7 years old, recovered.

Tuberculosis—White male, 58 years old, died; white female, 69 years old, died.

Births—White, living, first male; white, living, first female; white, living, second female; white, living, first male; white, living, first male; white, living, third male; white, living, first female; white, living, first female; white, living, fourth male; white, living, third female.

Deaths—White female, married, 69 years old, March 14, 1909; white female, married, 46 years old, March 25; white male, widower, 69 years old, May 5; white male, single, 3 months old, August 29; white male, married, 43 years old, August 23; white male, married, 58 years old, December 21; white female, widow, 80 years old, December 24.

Cause of Death of Above—Tuberculosis, 2; la grippe-pneumonia, 1; cancer, 2; gastro-enteritis, 1; valvular disease of heart, 1.

BRUNSWICK.

Brunswick, Md., Jan. 17. 1910.

Dr. Marshall Langton Price,

Secretary State Board of Health, Baltimore.

Dear Sir: I enclose report for 1909. There are two points worthy of note—the diminished number of deaths compared with 1908, 58 and 89, respectively, and the few cases of typhoid fever in the City of

Brunswick, there being only 10 in 1909, while there were 32 in 1908. This, I think, is largely due to the pure supply of water we now have. The greater part of the town is being furnished with water from a drilled well over 300 feet deep. This is pumped into a large tank and carried to about two-thirds of the town by pipes. The remaining part of the town is furnished by cisterns and water from the Potomac river, which latter they have learned to avoid.

BRUNSWICK AND VICINITY.

Deaths—Pneumonia, adult females 2, infant 1; tuberculosis, adult male 1; heart disease, adult males 2, females 3, infant male 1; cerebral hemorrhage, adult males 2, females 5; diabetes, adult male 1; old age, male 1, females 2; bronchitis, adult male 1, female 1, infant females 2; convulsions, infant males, 4, female 1; cancer, adult male 1, female 1; placinta previa, 1; nephritis, adult males, 2, female 1; diphtheria, infant females, 2; leukemia, infant male 1; cholera infantum, males 2, females 4; accidents, gunshot 1, kicked by horse 1, kicked by man 1, killed by cars, 2; intussusception, 1; congenital malformation, 2; gallstone, 1; senile gangrene, 1; still-births, 3. Total for 1909, 58; total for 1908, 89.

Births—Males, 61; females, 65; still-births, 3.

Contagious Diseases—Typhoid fever, 16 cases; scarlet fever, 14; measles, 6.

Typhoid fever in Brunswick, 1909, 10 cases; 1908, 32.

Respectfully,
LEVIN WEST, Health Officer,
Brunswick, Md.

CUMBERLAND.

CUMBERLAND, MD., Jan. 17, 1910.

DR. MARSHALL L. PRICE,
Secretary Board of Health of Maryland.

Dear Dr. Price: I have the honor to report the following births and deaths during the first seven months of my time in office. Beginning with the month of June and ending with the month of December, 1909, I have reported 360 births and 225 deaths. For the same months of 1908 my predecessors reported 257 births and 223 deaths. The report on births is for only six months, as there are no records for same during the month of June, 1908.

I am unable to make a comparison for the different years on report of cases of infectious diseases, as no records have been kept. There is very little illness at present, except epidemics of whooping-cough, German measles and chickenpox. There are hundreds of cases of these diseases at present, but very few of them are reported. It is my opinion that we had more typhoid the past fall than we have had any other year for the past six years. The water seems to be the chief source from which it comes. We are going to apply to the present Legislature for a new city charter, provision being made for the establishment of a local health department (a real one)—one that will co-operate with you, and one that will be in position to enforce some very necessary health regulations.

Very respectfully,

A. Leo Franklin.

FREDERICK.

Frederick, January 1, 1910.

Dr. Marshall Langton Price,
Secretary State Board of Health.

Dear Sir: I enclose annual report of the City Health Officer for the year 1909. Births reported during the year, 160; whites 130, males 77, females 53; colored 30, males 15, females 15.

Deaths during the year, 210; whites 159, males 90, females 69; colored 51, males 30, females 21.

Died under one year, 39; from 1 to 5 years, 8; from 5 to 10 years, 1; from 10 to 15 years, 5; from 15 to 20 years, 7; from 20 to 30 years, 13; from 30 to 40 years, 18; from 40 to 50 years, 18; from 50 to 60 years, 19; from 60 to 70 years, 27; from 70 to 80 years, 37; from 80 to 90 years, 17.

Causes of Death—Tuberculosis, 20; cirrhosis of liver, 2; senile debility, 13; apoplexy, 8; carcinoma, 11; burns, 2; bronchitis, chronic 1; organic heart disease, 11; valvular heart disease, 11; paralysis, 6; gallstone (operation), 2; still-born, 10; marasmus, 6; arteriosclerosis, 8; alcoholism, 3; anæmia, pernicious, 1; nephritis, chronic, 9; chloroform narcosis, 1; congenital syphilis, 2; violence, accidental, 8; bronchitis, acute, 3; appendicitis, operation, 2; typhoid fever, 6; angina pectoris, 2; pneumonia, 8; atelectasis, 2; prostatectomy, 2; hepatitis, 1; meningitis, acute, 3; cerebral hemorrhage, 4; measles, 1; tetanus, traumatic, 3; septicæmia, puerperal, 3; diabetes-mellitus, 1; spinal-sclerosis, 1; indigestion, acute, 4; nephritis, acute, 2; hernia, strangulated, 1; dentition, 3; cholera infantum, 3; heat stroke, 1; herniaotomy, 1; pertussis, 1; paresis, 2; carbolic acid, 1; uræmia, 1; premature birth, 4; hemorrhage, capillary, 1; rheumatic fever, 1; prostatitis, 1; diphtheria, 1; auto infection, septic, 1; enteritis, 1; paralysis, agitans, 1; leukamia, 1; gallstones, 1; croup, 1; strangulation, 1.

Yours respectfully,

Ira J. McCurdy, M. D.,
Health Officer.

FROSTBURG.

Dr. W. O. McLane, Health Officer. No report.

GARRETT PARK (Kensington).

Dr. Eugene Jones, Health Officer. No report.

HANCOCK.

Dr. H. E. Tabler, Health Officer. No report.

HAVRE DE GRACE.

Dr. I. J. Woodward, Health Officer. No report.

KENSINGTON.

Dr. Wm. L. Lewis, Health Officer. No report.

LAUREL.

Dr. W. Franklin Taylor, Health Officer. No report.

LONACONING.

Dr. J. O. Bullock, Health Officer. No report.

OLNEY.

Olney, December 28, 1909.

Report of Olney District, Board of Health, from November 1, 1908 *to October* 31, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health.

Dear Doctor: In pursuance of law, I have the honor to report the annual statistics for Olney district. It will be seen that tuberculosis heads the list of diseases causing death. As our district lies nearly between the large cities of Baltimore and Washington and in close proximity to them, these affected cases are sent out here in our elevated and healthy country, which is one cause of a higher mortality from this disease. There has been a marked decrease in the prevalence of typhoid fever, which is hoped to be due to a more persistent use of disinfectants, and more watchful care as to nuisances and our water supply.

It seems to be the opinion of those persons looking into the subject that there ought to be a proper law enacted to regulate the practice of midwives, and to be instructed before granting them a license, for some of the ignorant ones are undoubtedly the cause of deaths of the new-born infants.

The following births have occurred, the deaths, with causes, being appended, viz.: Births, white 23, colored 53; deaths, white 15, colored 36.

Causes of Death—Still-born, 1 white and 6 colored; carcinoma, 1 white; hematemesis, 1 white; apoplexy, 2 white and 1 colored; blood poisoning, 1 white; abscess of lung, 1 colored; tuberculosis, 8 colored; typhoid fever, 1 colored; rheumatism, 1 colored; influenza, 1 white and 2 colored; syphilis, 1 colored; marasmus, 1 white and 3 colored; burned to death, 1 colored; pneumonia, 1 white and 3 colored; heart disease, 2 colored; old age and senility, 2 white and 1 colored; lack of milk, 1 colored; acromegaly, 1 white; gastric catarrh, 1 white; Bright's disease, 1 colored; hepatic calculi, 1 white; hemiphlegia, 1 white; arteriosclerosis, 1 colored; gunshot wound, 1 colored.

Respectfully yours,

CHAS FARQUHAR, M. D., Secretary.

POCOMOKE CITY.

POCOMOKE CITY MD., Jan. 13, 1910.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health.

Dear Sir: I am glad to report that our people enjoyed good health during the year 1909. My work as Health Officer is confined to the corporate limits of Pocomoke City. No cases are reported to me but infectious. We had of typhoid fever 18 cases, 2 deaths; diphtheria, 2 cases, no deaths; tuberculosis, 2 deaths, 1 living. All were fumigated.

Yours, etc., J. T. COSTEN.

TAKOMA PARK.

TAKOMA PARK, D. C., Feb. 1, 1910.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health, Baltimore, Md.

Sir: As Registrar of Vital Statistics for the town of Takoma Park, Montgomery county, Md., I have the honor to submit the following report for the year ended December 31, 1909: There have occurred 24 births, 16 deaths and 7 marriages.

The population of the town is rapidly increasing, and the larger number of deaths reported are of invalids who have come here from Washington, hoping for improvement, or of those who have come to the Sanitarium with chronic and incurable ailments.

The general health of the town has been good. No case of typhoid, diphtheria or meningitis has occurred. During the early summer juvenile mumps circulated quite freely, and later on there were a number of cases of whooping-cough. In December two families reported scarlet fever, which was of a mild form and resulted in no fatalities.

In order to further insure the purity of our water supply, the Town Council is about to install an effective and costly filter system. We believe that in all matters affecting the public health the best efforts and appliances are none too good to use and adopt.

Respectfully, L. M. MOOERS.

LIST OF TOWN HEALTH OFFICERS.

Aberdeen	Dr. C. H. Kriete.
Annapolis	Dr. Wm. S. Welch.
Brunswick	Dr. Levin West.
Cambridge	Dr. J. C. Travers.
Cumberland	Dr. A. Leo Franklin.
Easton	Dr. Philip L. Travers.
Frederick	Dr. Ira J. McCurdy.
Frostburg	Dr. W. O. McLane.
Garrett Park (Kensington)	Dr. Eugene Jones.
Hancock	Dr. H. E. Tabler.
Havre de Grace	Dr. I. J. Woodward.
Kensington	Dr. Wm. L. Lewis.
Laurel	Dr. W. Franklin Taylor.
Lonaconing	Dr. James O. Bullock.
Olney	Dr. Charles Farquhar.
Pocomoke City	Dr. Isaac T. Costen.
Tacoma Park	Mr. H. E. Rogers.
Tacoma Park—Sub-Registrar	Mr. L. M. Mooers.

Reports of Sanitary Inspections, 1909.

I—SANITARY SURVEYS AND INVESTIGATIONS.

AN OPINION UPON THE SANITARY CONDITION OF THE CHARLOTTE HALL SCHOOL, WITH SPECIAL REFERENCE TO THE WATER SUPPLY, MILK AND OTHER FOODS, AND ALSO AN OPINION AS TO THE ORIGIN OF A CASE OF TYPHOID FEVER AT THE INSTITUTION DURING THE MONTH OF NOVEMBER, 1908.

I am sending herewith an opinion upon the water supply of the Charlotte Hall School, also opinions relative to sewage disposal, food supply and general sanitary condition. Attention is called to the attached sheets, giving results of the analysis of the springs and wells supplying the institution, and also to the sheet giving the analysis of the milk.

1. Situation, Population and Consumption of Water.

The Charlotte Hall School is situated on the Washington, Potomac and Chesapeake Railroad, 15 miles south of Brandywine and about an equal distance north of Leonardtown. The school is located in St. Mary's county, a short distance across the line dividing St. Mary's and Calvert counties, and contains about 600 acres, more or less. The grounds are generally flat, with a gentle slope toward the west. Across the railroad track the ground slopes toward the east. The ground upon which Charlotte Hall is located forms a divide between the watersheds supplying Trent Hall Creek to the east and Gilbert Run to the west. The elevation of the school above tidewater is about 160 feet. The main school buildings are a dormitory, the gymnasium, the church and the school building proper, which contains one large study and recitation room, chemical laboratory and the administrative offices. The bulk of the ground is cultivated, except toward the south and west, where they are heavily wooded. The total population is about 107 persons, distributed as follows:

Resident students	85
Day scholars	10
Faculty	5
Resident employees	7

The seven resident employees include one janitor, two cooks, two waiters and pantrymen, one nurse maid, one pantry maid and scullion.

2. WATER SUPPLY.

(a) *Collection.* The general water supply of the institution is derived from supply stream No. 1. From this spring it is piped to a small cement reservoir, from which it descends to three rams, which force it up into the water tower, from which it is piped to the various buildings.

(b) *Distribution.* From the water tower the pipe passes east to supply the superintendent's residence, and to the west to supply the school hall and the dormitory. Only one room is supplied in the hall, the chemical laboratory. In the dormitory the pipe enters each wing of the building. On the ground floor the closet and wash basin are supplied from each wing of the building. On the second and third floors of each wing a number of wash basins are supplied. The accessory supply includes a spring and pump in the superintendent's ground—supply spring No. 2, not now in use; a shallow dug well in the rear of the south wing of the dormitory (No. 7), and a dug well in the barnyard (No. 8), mainly used for watering stock. The main and accessory water supplies and the means of distribution are all indicated in the accompanying map "A." The numbers refer to the numbers of samples upon the attached analysis sheet.

SUPPLY SPRING NO. 1..

This spring is located near the foot of the hill sloping toward the south. The nearest source of contamination is an earth closet, about 100 yards above. The chemical analysis indicates that this water is good. It will be seen, however, by comparison with supply spring No. 2 (sample No. 3) that both the nitrates and chlorine are considerably higher than in sample No. 3, which probably approaches the normal for uncontaminated spring water in this neighborhood. Sample No. 2 is the same water as sample No. 1. The chlorine is slightly higher and the nitrates considerably lower. The bacterial counts in samples Nos. 1 and 2 are 3 and 60, respectively. The colon bacillus was present in each sample, and both are reported bad bacteriologically. Supply spring No. 1 is bricked and cemented, and contains a spring of clear cold water, with a very strong flow, apparently rising from some depth in the ground. From the situation of the spring, however, it is not at all unlikely that it occasionally receives surface water. It is also probable from the topography of the country that this spring rises from precipitation in an area with a radius of less than one-half mile. While the presence of colon bacillus in 10 c. c. is frequently transient and accidental, it would appear from the chlorine and nitrates being in excess of the normal that this spring was contaminated at the time these samples were taken, though not to an excessive degree. Two spigot samples were also taken from the general supply, one from the chemical laboratory and one from the third-floor dormitory. The first of these samples

(No. 5) was reported good chemically and bacteriologically. Its chemical composition was somewhat like sample No. 1. Sample No. 6, taken from the dormitory, shows an excessive amount of chlorine (5.8). This sample also has the highest bacteriological count of any of the samples taken, though the colon bacillus was not found. There was a very perceptible smell of ether from this water, and these facts, taken in conjunction, lead me to believe that there is some leak in the pipe in the neighborhood of the dormitory.

SUPPLY SPRING No. 2.

This spring is located on the opposite side of the ravine and faces toward supply stream No. 1. It is also bricked and cemented. This spring is much more favorably located both in its relation to surface and subsoil pollution. I am of the opinion, from the results of the analysis, that this is the best of the samples taken. The chlorine and nitrates are very low, as is also the bacterial count. The colon bacillus is absent.

WELL SAMPLE, No. 7.

This is a dug well in the rear of the south wing of the dormitory, and is about 18 to 20 feet deep, with brick walls. This water probably has been used more for drinking than any of the other sources of supply. The well is subjected to numerous surface contaminations from chickens and other domestic animals, and also is in close relation to earth closets. Like most polluted waters of this character, it is clear and sparkling and has a perceptible organic taste. The high chlorine and nitrates would be alone sufficient to condemn the sample. While the bacterial count is not unduly high and the colon bacillus not found, I am of the opinion that the absence of the latter was merely transient and accidental, and that if a number of samples were taken it would eventually appear. Stable-yard well, sample No. 8, is reported good chemically and bacteriologically, but I consider the surroundings suspicious. The remaining sample, No. 4, taken from the principal's spring, is reported good chemically and bacteriologically.

Recommendations.

First—I recommend that the dug well in the rear of the dormitory be dismantled, the pump removed and the use of the well for drinking purposes be discontinued.

Second—That at least two additional series of samples be taken during the summer weather, and that before a permanent supply is settled upon that the capacity of supply spring No. 2 and the superintendent's spring be tested to determine if they will furnish a sufficient supply for the institution, allowing not less than 30 gallons per capita a day.

Third—That when a satisfactory supply is secured, water be piped to all parts of the buildings, that all accessory supplies be discontinued, and that the main supply be depended upon for all purposes, including drinking and bathing.

Sewage Disposal.

The methods of sewage disposal at the Charlotte Hall School are very imperfect and are the only feature of the school deserving severe criticism from a sanitary standpoint. While I realize that many of these conditions have arisen through lack of funds, I think the existing conditions should be remedied before one dollar is expended upon the grounds or buildings, or for any other purpose excepting to improve the water supply. There are only two closets with water attachment in the institution, and both are located in the dormitory, and neither of them used by the bulk of the students. The sewage from the closet in the south wing passes 150 yards to the rear through a terra-cotta pipe and discharges its refuse on the surface. That from the closet on the north wing is piped to a small cesspool, from which it overflows into a ditch, which collects also the overflow from the other pipe. The capacity of the cesspool is too small to allow its retention for a sufficiently long time and to subject it to even partial bacterial purification. It does, however, collect a certain portion of the solids. The most unsanitary method of sewage disposal, however, is the earth closet and the surrounding woods, used by the bulk of the students. The opportunities for contagion to be carried into the institution on the shoes or by flies during the summer season are such that a general epidemic might occur among the students at any time if a single case of typhoid fever or typhoid carrier enters the institution. The same conditions apply to the overflow from the dormitory in a lesser degree. A discharge of sewage upon the surface must always be regarded as *per se* a nuisance dangerous to public health.

Recommendations.

First—That a sufficient number of closets be installed in each part of the dormitory with suitable water connection, also in the school building and the gymnasium.

Second—That the present earth closets be burned or torn down and filled to the level of the ground.

Third—Pending the introduction of proper sewage and water connection, that earth or ashes be placed in the earth closets.

Fourth—That rules and regulations be adopted in reference to sewage disposal, and that a violation of these regulations be made an infraction of the discipline of the institution.

Fifth—The installation of a modified Waring system of sewage disposal is recommended, the septic tanks to be made of sufficient large capacity to retain the sewage for at least 24 hours.

MILK SUPPLY.

The milk supply deserves careful consideration from the authorities of the institution on account of the extreme frequency with which it acts as a vehicle in conveying the infectious diseases. This is not only true of typhoid fever, but of diphtheria, scarlet fever and the other acute exanthemata. Milk when improperly handled is even more dangerous than dynamite, and special care is always necessary in an institution which contains so many boys of susceptible age.

The Charlotte Hall School produces practically all of its milk and most of its own cream. There are three cows kept on the place, which are milked by one man, who also cares for the cans and milk buckets. The latter are only rinsed and not scalded after use. The cows are milked twice daily—7 A. M. and 6 P. M. The milk is strained and brought to the house and emptied into crocks. The milk is served in the dining room in pitchers. All of the students use milk, more or less. The milk buckets and strainers hang outside when not in use. The milk is used practically as soon as collected, and this serves to cut down the possibilities of its acting as a vehicle for disease to the minimum.

Recommendations.

I recommend, however, that the cows be washed previous to milking; that the milker be required to wash his hands and put on a clean linen or cotton coat; that the cows be milked into freshly scalded buckets, and that the milk be immediately cooled to a temperature of 50° Fahr. or lower, and kept at this temperature until served.

TYPHOID FEVER.

On November 21 Jesse H. Dorsey, aged 15, a student in the school, was removed to his home, 1333 York road, Baltimore, suffering with a severe attack of typhoid fever, from which he died on the 28th. From the evidence at hand, it appears that the onset of this attack dates back to November 2, and during the interval he had an ambulant case of typhoid fever. About November 23 Herbert Scheussler was taken sick and removed to his home, at 1011 Canton street, Baltimore. The attending physician in this latter case was Dr. Herbert Schoenrich, who regarded the case as one of acute catarrhal appendicitis. Dr. Schoenrich has co-operated in every possible way with the State Board of Health in securing a correct diagnosis in Scheussler's case. He has taken and sent into the laboratory several specimens of blood and one blood culture, all of which were negative, and I am of the opinion that Dr. Schoenrich's diagnosis of catarrhal appendicitis was correct.

As regards the origin of Dorsey's case, there are three possibilities to be considered: First—Infection in the institution through the general food or water supply. Second—Infection through food from unknown sources. Third—Infection outside of the institution. As regards the latter possibility, the absence of Dorsey from the institution occurred once at a time more than a month previous to the most remote date at which the incubation period could be fixed. During his second absence it was evident that he was suffering from the disease. It is, therefore, evident that he must have been infected at the institution. The physiological test would be sufficient to rule out the possibility of any infection of the water or food supply, as out of 85 boys at the most susceptible age, Dorsey was the only one attacked. Food was twice served from other places outside of the institution—once about September 15, and the second time about October 15. This, however, was also eaten by the other boys, none of whom suffered any consequence. It has been customary in the school for the boys occasionally to buy and eat oysters, and this occurred several times in Dorsey's case. It appears possible that some of these oysters may have been infected with the typhoid bacillus, and that this is a possible explanation of his attack.

As appears from the attached table, one of the four oysters taken from the school on December 10 came from a contaminated bed, as the colon bacillus was present in one c. c. of the juice.

My only other recommendation is that a detention room be provided for cases of sickness among the boys, and that the discharges be disinfected in such cases without respect to the nature of the disease. In accordance with the provisions of Section 127 of Article 43 of the Code of Public General Laws, the publication of this report is authorized.

TABLE 1—ANALYSIS OF OYSTERS.

Bacteria per c. c	1	2	3	4
Bacteria per c. c	60	1,800	1,200	1,500
Lactose bile (fermentation)	Unch.	Uuch.	Unch.	40%
Lactose biuillon (fermentation)				30%
Milk				Acid and coagulated
Gelatin				Negative
Colon bacillus (1 c. c.)				Present

ADDENDUM.

CHARLOTTE HALL, MD., April 21, 1909.

DR. M. L. PRICE,
Secretary State Board of Health, Baltimore, Md.

Dear Sir: The report upon the Charlotte Hall School investigation has been received. Please accept my thanks for same. I find all of your statements correct, except as to one particular, to which you must permit me to call your attention.

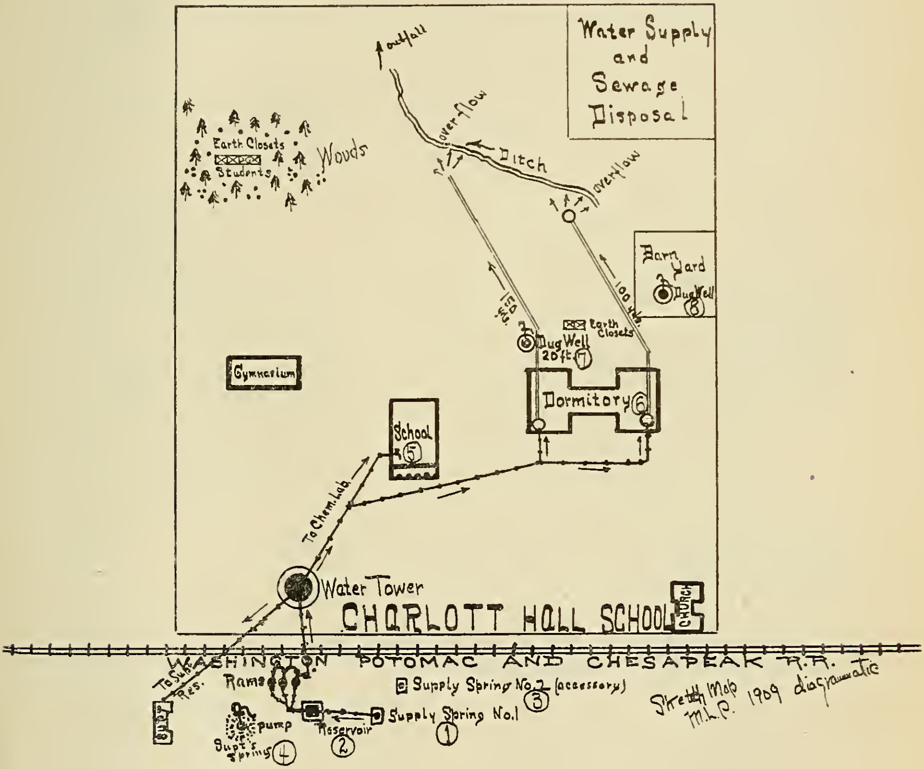
The statement with reference to the care of the milk pails is incorrect. The pails have always been *scalded,* and not simply rinsed.

I was present, you may remember, when you were questioning the man who does the milking, and I am sure you must have misunderstood him on that point. I call your attention to this matter simply because I know you have no desire other than to get at the facts. I shall certainly urge upon the trustees the vital importance of conforming as closely as possible to the lines you have suggested. Again thanking you, I beg to remain, with kindest regards,

Very truly yours,

(Signed) J. F. Coad, Vice-Principal.

Charlotte Hall School,
Charlotte Hall, Md.



Sketch Map 1909 diagramatic
M.L.P.

ANALYSIS OF MILKS SUPPLYING CHARLOTTE HALL SCHOOL.

SAMPLE MARKED.	Morning's Milk from Bowl in Dining Room.		Same after Running Through Milk Bucket.		Legal Standard.
CHEMICAL ANALYSIS.					
Total Solids	11.69	S. 9. 1.026	11.21	S. 9. 1.026	12.5 per cent.
Solids not fat	7.49		7.41		10 "
Butter fat	4.20		3.80		3.5 "
Coloring	0		0		none.
Preservative	0		0		none.
Character of Milk	Low in solids		Low in solids		
BACTERIOLOGICAL ANALYSIS.					
No. Bacteria per c. c.	72.000		30.000		
Colon Bacillus $\frac{1}{1000}$ c. c.	0		0		
Character of Milk	Good		Good		

Approved:
MARSHALL LANGTON PRICE, *Secretary.*

W. B. D. PENNIMAN, *Chemist.*
WM. R. STOKES, *Bacteriologist.*

ANALYSIS OF WATERS SUPPLYING CHARLOTTE HALL SCHOOL.

CHEMICAL ANALYSIS (Parts per Million).

SAMPLE MARKED.	INSTITUTION—SPRING Supply Spring No. 1. C. H. S. I. No. 1.	INSTITUTION—IMPO'D RESERVOIR — Collection Reservoir for Spring No. 1. C. H. S. I. No. 1.	INSTITUTION—SPRING Supply Spring No. 2 (Accessory). C. H. S. I. No. 2.	PRIVATE — SPRING Principal's Spring. C. H. S. p. No. 1.	INSTITUTION—SPIGOT Chemical Laboratory C. H. S. I. No. 1.	INSTITUTION—SPIGOT Dormitory, 3d Floor. C. H. S. I. No. 2.	ACCESSORY — WELL Dug rear of Dormitory (18 feet). C. H. S. p. No. 1.	ACCESSORY — WELL Stable Yard Well. C. H. S. p. No. 2.
Color	0	0	0	0	0	0	0	0
Odor	0	0	0	0	0	0	0	0
Reaction	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Total residue at 230° F	64	44	80	88	40	36	92	48
Chlorine	4.4	4.6	3.2	3.8	4.6	5.8	15.6	4.4
Nitrogen as Free Ammonia	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace
Albuminoid Ammonia	Trace	Trace	Trace	0.054	Trace	Trace	0.135	0.137
Nitrates	2.85	1.90	0.50	1.55	2.15	1.95	7.85	2.15
Nitrites	0	0	0	0	0	0	0	0
Character of Water	Good	Good	Good	Good	Good	Suspicious	Bad	Good

BACTERIOLOGICAL ANALYSIS.

SAMPLE MARKED.	INSTITUTION—SPRING Supply Spring No. 1. C. H. S. I. No. 1.	INSTITUTION—IMPO'D RESERVOIR — Collection Reservoir for Spring No. 1. C. H. S. I. No. 1.	INSTITUTION—SPRING Supply Spring No. 2 (Accessory). C. H. S. I. No. 2.	PRIVATE — SPRING Principal's Spring. C. H. S. p. No. 1.	INSTITUTION—SPIGOT Chemical Laboratory C. H. S. I. No. 1.	INSTITUTION—SPIGOT Dormitory, 3d Floor. C. H. S. I. No. 2.	ACCESSORY — WELL Dug rear of Dormitory (18 feet). C. H. S. p. No. 1.	ACCESSORY — WELL Stable Yard Well. C. H. S. p. No. 2.
No. Bacteria per c. c. Ærobic	3	60	40	60	60	138	15	54
Colon Bacillus in 1 c. c.	0	0	0	0	0	0	0	0
Colon Bacillus in 10 c. c.	Present	Present	0	0	0	0	0	0
Colon Bacillus (Presumptive test)	0	0	0	0	0	0	0	0
Character of Water	Bad	Bad	Good	Good	Good	Good	Good	Good

Approved:
MARSHALL LANGTON PRICE, *Secretary.*

W. B. D. PENNIMAN, *Chemist.*
WM. R. STOKES, *Bacteriologist.*

INSPECTION AT 717 GORDON AVENUE.

BALTIMORE, March 17, 1909.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health of Maryland.

Sir: I have the honor to report upon an inspection of the sewage disposal at 717 Gordon avenue, "Maplewood," Baltimore city, made on Friday morning, 12th instant. Pursuant to your instructions, I arrived on the scene of action at 8.35 A. M. The work of excavating began promptly at 8.45 A. M.

Mr. Charles L. Gosnell, of the Baltimore County Water and Electric Company, accompanied me. The manual labor was performed by a colored man, and under the direction of Mr. Downey, the latter being an employee of Mr. Cook, of the Maplewood Building and Loan Association.

The point at issue was to test whether or not the toilet and bathroom sewage from the property at 717 Gordon avenue is entering and polluting Herring Run or its tributaries. Mr. C. I. Putts, Jr., City Inspector of Plumbing and Drainage, had made the uranine test a few days previously (Monday, March 8), which proved to be positive. The only thing remaining was to unearth and see the actual sewer pipe. Its existence had been stoutly denied by the builder of the Maplewood houses.

On Friday morning, in addition to Mr. Gosnell and myself, two of Mr. Putts' men (Messrs. Ward and Pumphrey), and Mr. C. H. Strobel, Jr., of 715 Gordon avenue, were also present. It was the latter who kept this office informed of the operations at 717 Gordon avenue. A short while ago Mr. Strobel and Mr. Schane handed to yourself the following item of information:

> "No. 717 Gordon avenue, said to be connected with sewer pipe for surface drainage December, 1908, or January, 1909. Rented and occupied by Mr. C. G. Patrick; owned by Dr. Samuel B. Routzahn, D. D. S. Connections made by Mr. Cook. Sewage from these premises said to have been traced from closets and bathrooms into Herring Run (uranine test)."

The following paragraph appears in a communication received at this office under date of January 2, 1909, and over the signature of Mr. William Hand, secretary of a meeting of the residents and property owners of Maplewood, held on December 31, 1908:

> "The general opinion expressed by those attending the meeting was that the Board of Health was in error in accusing the residents and property owners of Maplewood of polluting a tributary to Herring Run and enjoining them against further pollution of said waters. The only offensive matter draining into said tributary from property in Maplewood is through a sewer pipe with which the bath and sink of each house is connected. The sewage from the closets drain into a well, with which each house is provided, and there is no connection whatever, so far as known by either the builder or those attending the meeting, between this sewer pipe and well. There being no sewage from closets emptying into this

sewer pipe, the question narrowed itself down to whether the washings from bathtub and sink pollute this tributary. It does not seem possible that Herring Run could be polluted by washings of the character mentioned drained into a tributary of said run three (3) miles from its mouth and running over gravel and sand. of which the bed of this tributary is composed. Even granted that the above-mentioned washings do pollute Herring Run, and the property owners disconnect from this sewer pipe, then the washings would run overground to the gutter, and, as the natural slope of the land is toward Herring Run, would eventually reach the same stream as it does now, and the object of the Board of Health would not have been obtained."

"Maplewood" has a 20-inch main sewer pipe. A short distance from its outlet a 6-inch branch empties into it. It would not be ascertained definitely, whether the uranine colored sewage entered the main pipe primarily or secondarily from the 6-inch branch pipe.

Four feet eight inches below the surface, at 717 Gordon avenue, a 6-inch sewer pipe encasing a 3-inch pipe was discovered. Upon removing a broken fragment of the encasing pipe uranine colored sewage was still lurking in its cavity. This pipe is an overflow from the cesspit belonging to the property at 717 Gordon avenue, and ultimately discharges its contents into the aforementioned 20-inch main sewer pipe, contaminating a tributary of Herring Run.

The excavation was made between Nos. 715 and 717 Gordon avenue. Mr. C. H. Strobel, Jr., who resides at No. 715 Gordon avenue, had his own cesspit thoroughly cleaned out and examined, but could find no trace whatever of any overflow pipe.

Respectfully submitted,

C. W. G. Rohrer,
Medical Assistant.

Addendum.

Mr. Downey requested me to inform you that he had had the promised filter installed on February 15. This, I understand, is a surface or grease filter, that is, a gravel bed.

APPENDIX TO "INSPECTION AT 717 GORDON AVE."

Baltimore, April 10, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health of Maryland,
Baltimore, Md.

Sir: I have the honor to submit an appendix to my report of March 17, 1909, entitled "Inspection at 717 Gordon Avenue." That report is correct up to and including the investigations made March 12, 1909, the date of my inspection. Subsequent to that date—March 12, 1909—other work has been done by Mr. C. I. Putts, Jr., City Plumbing Inspector, and his men, which alter considerably the facts contained in the above report and submitted to you under date of March 17.

On Friday afternoon, April 2, 1909, Dr. C. Hampson Jones, Assistant Commissioner of Health of Baltimore City, summoned Mr. Putts, Mr. Downey and myself to a conference in his office relative to the condition of affairs on Gordon avenue, "Maplewood."

Mr. Putts communicated the following information: On Monday, March 15, 1909, he (Mr. Putts) and his men resumed their work of excavating at 715 and 717 Gordon avenue. The real source of the "uranin colored sewage" found in the 3-inch pipe unearthed between these two pieces of property was still open to question. Mr. Putts "found a 3-inch terra-cotta pipe connecting to 715 well and rain leader of 717 well," thus proving both houses to be at fault.

It was disclosed at this meeting by both Mr. Putts and Mr. Downey that only three of the "Maplewood" houses were proved to have been contaminating Herring Run, namely:

(a) 620 Cator avenue, owned by ———.
(b) 715 Gordon avenue, owned by ———.
(c) 717 Gordon avenue, owned by ———.

In all three instances the trouble has been corrected by Mr. Putts, aided by Mr. Downey. If any other "Maplewood" house or houses are at any time under suspicion, Mr. Downey volunteered to superintend the necessary explorations to either prove or disprove such an opinion.

Respectfully submitted,

C. W. G. Rohrer,
Medical Assistant.

INSPECTION OF THE COXON DAIRIES.

Baltimore, April 15, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health of Maryland,
Baltimore, Md.

Sir: I have the honor to report upon an inspection of the Coxon dairies, Gardenville Postoffice, Baltimore county, made pursuant to your instructions March 18, 1909. The appearance of several cases of typhoid fever in this neighborhood was the *fons et origo* of the recent inspection.

Under date of March 12, 1909, and over the signature of Dr. Bosley, Health Commissioner of Baltimore City, the following communication was received at this office:

> "It is reported to this Department that there is a case of typhoid fever in the family of Wm. G. Vance, in Brehm's lane, in the place occupied by Robert Coxon. According to the information that we have received, it seems that there has been more than one case of typhoid fever in this house during the last few months, and from special information I find that the well water is contaminated. Will you please have the place examined."

The Coxon dairies, three in number, are located at Gardenville, Baltimore county, on a gentle eminence, about 300 yards from Herring Run. Of the three dairies—the Oriole Farm Dairy, the Clairmont Farm Dairy and the Furley Hall Farm Dairy—the former two are retail dairies and the latter is a wholesale dairy. The first retail dairy—the Oriole Dairy—is managed by George Edward Coxon; the second—the Clairmont Farm Dairy—is managed by Harry Eugene Coxon. The wholesale dairy—the Furley Hall Farm Dairy—is operated by Robert Coxon. Robert Coxon, wholesaler, sells his milk to the above two brothers, retailers.

The Coxon brothers keep between 70 and 80 milch cows, and retail in Baltimore City 150 gallons of milk a day. Their herds are of the finest and best, and composed largely of Holstein and Jersey stock. The stables are clean and well-kept, and the cows' feed is of the first quality. Water is drunk while standing in the stall.

The milk-house, like the farm buildings, was in a thoroughly sanitary condition. The milk cans and other utensils were clean and sweet. In fact, I only had one suggestion to offer, namely, that it appeared to me Mr. Coxon was keeping the temperature of his cow stables a little too high.

There has been no case of sickness in any of the Messrs. Coxon's families. As stated in Dr. Bosley's letter, the case of typhoid fever occurred in the family of William G. Vance, a tenant of Mr. Coxon. At the present time there is but one member of the Vance family ill—Arnold Vance, aged 6 years. There are six persons in William G. Vance's family—Mr. and Mrs. Vance and four children. All are well but Arnold.

Arnold Vance, white, aged 6 years, was taken sick February 26, 1909. Residence, Gardenville Postoffice, Baltimore county. Patient has been ill about two weeks. Patient is now (March 18) in the Baltimore City Hospital; has been in hospital about a week. Is now convalescent. Only case of typhoid in Vance family.

Another recent case of typhoid fever in vicinity of the Arnold Vance case: Mrs. Eugene Rosenstein, white, aged 28 years. Postoffice address, Raspeburg. Mrs. Rosenstein was taken ill four weeks ago. Is now in the Maryland University Hospital. Her condition has been critical.

In addition to these two recent cases of typhoid fever—Arnold Vance and Mrs. Eugene Rosenstein—three other cases should be mentioned in this connection, namely, Beulah Curtis, Adolph Brebeck and Mrs. Emma Vance. Eliminating the first case—Beulah Curtis—which occurred in Woodberry, a series of four cases is left as occurring in the vicinity of Gardenville and Raspeburg. A short sketch of each of the five cases, however, is hereby appended:

Case I—Primary or first case. Girl from Woodberry, Beulah Curtis, visited the Barnes family last July a year ago. Miss Curtis had typhoid fever during Woodberry-Hampden outbreak. She was ill at home. Residence, Woodberry.

Case II—Adolph Brebeck; was ill with typhoid last summer. Mr. Brebeck was taken to the Hebrew Hospital. Apparently he made a complete recovery. Is now employed by Mr. Coxon, and is one of his milkmen. Residence, Gardenville.

Case III—Mrs. Emma Vance, Gardenville. Mrs. Vance was taken sick August 18, and remained ill with typhoid fever from August 18 to November 7, 1908. She was ill at home. Mrs. Emma Vance is the mother-in-law of Mrs. William G. Vance and the grandmother of the boy Arnold Vance.

Case IV—Mrs. Eugene Rosenstein, now in Maryland University Hospital with typhoid fever. Mrs. Rosenstein was taken ill four weeks ago, and her condition is reported to be critical. Residence, Raspeburg. Mrs. Rosenstein lives in the house formerly occupied by Mrs. Emma Vance (Case III).

Case V—Arnold Vance, white, aged 6 years, ill two weeks. Now in Baltimore City Hospital.

The first case, Beulah Curtis, occurred in Woodberry; the other four occurred in Gardenville and Raspeburg, about 300 to 500 yards from Herring Run.

Mrs. George Barnes, daughter of Mrs. Emma Vance (Case III), with whom the latter is making her home, has moved from Raspeburg to 1616 Harford avenue. The house which Mrs. Emma Vance formerly occupied with her daughter, Mrs. George Barnes, is now tenanted by Mrs. Rosenstein (Case IV). There are five members in Mrs. Rosenstein's family, three being children. All are well but the mother.

There are six members in Mrs. William G Vance's family, four being children. All are well but Arnold Vance.

There are eleven in the Barnes family, counting Mrs. Emma Vance and her husband. Seven are children. All are well.

Mrs. Emma Vance (Case III), mother-in-law of Mrs. William G. Vance, was in the house when the latter was confined—January 30, 1909. The boy Arnold Vance was taken sick February 26, 1909. As stated above, Mrs. Emma Vance now resides at 1616 Harford road, with her daughter, Mrs. George Barnes.

Three samples were collected for bacteriological analysis, as follows: Sample No. 1, milk from Coxon dairy; sample No. 2, water from well at Coxon's; sample No. 3, water from spring at Coxon's.

Conclusions.

(1) Upon information gleaned from my inspection, it would appear that Mrs. Emma Vance is a "typhoid carrier," as I can attribute no other source of origin to the Arnold Vance case. The time which

elapsed between the advent of Mrs. Emma Vance into Arnold Vance's father's house conforms pretty closely to the average incubation period of typhoid fever.

(2) I await your pleasure and Dr. Bosley's permission to investigate thoroughly this matter.

Respectfully submitted,

C. W. G. Rohrer,

Medical Assistant.

MARKET MILKS SUPPLYING HAGERSTOWN.

In accordance with the provisions of Section 127 of Article 43 of the Code of Public General Laws, the analysis of thirty-two (32) samples of market milks taken by C. N. Mitten, an inspector of the State Board of Health, from wagons in Hagerstown, April 7, 1909, is hereby made public.

The effectiveness of State supervision and inspection is shown by the fact that none of the samples taken contained either coloring matter or preservatives.

Eleven samples were below the legal standard in butter fats, and presumably had either cream removed or water added.

These were samples—Nos. 1, 3, 5, 6, 7, 14, 18, 22, 25 and 30. The lowest amount of cream was in sample No. 25 (only 2.40%). This sample was also deficient in total solids by about two per cent—10.53%.

All of the samples deficient in cream were also deficient in total solids.

The sample lowest in total solids was sample No. 3 (9.93%).

In four samples the butter fat was below 3% (samples Nos. 6, 14, 25 and 30).

In accordance with the provisions of Section 127 of Article 43 of the Code of Public General Laws, the publication of this report is authorized.

Marshall Langton Price,

May 26, 1909. Secretary.

ANALYSIS OF MILK SUPPLYING HAGERSTOWN.

Sample Marked.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	
	CEDAR LAWN DAIRY. Thomas & Co. 10-Gallon Can.	WAGON. H. E. McDade. 10-Gallon Can.	WAGON. Martin L. Smith. 10-Gallon Can.	CLOVER HILL DAIRY. Samuel E. Schindel. 10-Gallon Can.	WAGON. Joseph D. Bragunier. 12-Gallon Can.	WAGON. Simon Baker. 10-Gallon Can.	LOCK WILLOW DAIRY. A. M. Evers. 10-Gallon Can.	HILLSIDE DAIRY. A. D. Holsinger. 10-Gallon Can.	
CHEMICAL ANALYSIS (Per Cent.)									Legal Stand'd
Total Solids	11.30	12.86	9.93	11.21	11.61	10.13	11.35	12.33	12.5%
Solids not fat	8.16	9.06	6.79	7.41	8.31	7.21	7.95	8.53	
Butter fat	3.14	3.80	3.14	3.80	3.30	2.92	3.40	3.80	3.5%
Coloring	0	0	0	0	0	0	0	0	None
Preservative	0	0	0	0	0	0	0	0	None
Character of Milk	*	....	*	....	*	*	*		

Sample marked * are below the legal standard in fats and total solids.

ANALYSIS OL MILK SUPPLYING HAGERSTOWN—*Continued.*

Samples Marked.	No. 9.	No. 10.	No. 11.	No. 12.	No. 13.	No. 14.	No. 15.	No. 16.	
	Cearfoss Dairy. Chas. W. Cearfoss. 11 and 20-Gallon Cans.	Wagon. Harry W. Wolgemuth. 10-Gallon Can.	Hygiea Dairy. Joseph Moats. 10-Gallon Can.	Cherry Dale Dairy. Phares Whitmer. 12-Gallon Can.	Wakefield Dairy. Roger Simmons. 1-Pint Bottle.	Wagon. N. E. Schindel. 10-Gallon Can.	Standard Dairy. J. V. Jamison. 5-Gallon Can.	Wagon. J. W. Bowman. Two 10-Gallon Cans.	
	Chemical Analysis (Per Cent.)								Legal Stand'd
Total Solids	12.33	11.21	13.06	12.57	12.84	11.62	12.22	11.71	12.5%
Solids not fat	8.53	7.41	8.96	8.57	8.86	8.70	8.72	8.01	
Butter fat	3.80	3.80	4.10	4.00	3.96	2.92	3.50	3.70	3.5%
Coloring	0	0	0	0	0	0	0	0	None
Preservative	0	0	0	0	0	0	0	0	None
Character of Milk	....	....	....	....	....	*			

Sample marked * are below the legal standard in fats and total solids.

ANALYSIS OL MILK SUPPLYING HAGERSTOWN—*Continued.*

SAMPLE MARKED.	No. 17.	No. 18.	No. 19.	No. 20.	No. 21.	N.o 22.	No. 23.	No. 24.	
	WAGON. W. Hammon. Two 10-Gallon Cans.	ACME DAIRY. Joseph Seigler. Two 10-Gal., One 12-Gal.	PEOPLES DAIRY. F. L. Johnson. Two 10-Gallon Cans.	WAGON. Porterfield & Neihert. 20 and 12-Gallon Cans.	WAGON. F. H. Knodle. Two 10-Gallon Cans.	MANSION FARM DAIRY. W. B. Price. Bottle.	MAUGANSVILLE CR. CO. H. W. Wohlgemuth. Four Cans in Shop.	SHOP. Mrs. Pituty Stouffer. Fr. Boy (cream), 1-Gal. Can	
CHEMICAL ANALYSIS. (Per Cent.)									Legal Stand'd
Total Solids	11.35	11.74	12.10	12.34	11.59	12.29	12.32	21.50	12.5%
Solids not fat	7.85	8.68	8.60	8.64	7.99	9.05	8.22	8 20	
Butter fat	3.50	3.06	3.50	3.70	3.60	3.24	4.10	13.30	3.5%
Coloring	0	0	0	0	0	0	0	0	None
Preservative	0	0	0	0	0	0	0	0	None
Character of Milk		*				*			

Sample marked * are below the legal standard in fats and total solids.

ANALYSIS OL MILK SUPPLYING HAGERSTOWN—*Continued.*

SAMPLE MARKED.	No. 25.	No. 26.	No. 27.	No. 28.	No. 29.	No. 30.	No. 31.	No. 32.	
	WAGON. Calvin Linn. 2-Gallon Can.	CITY DAIRY. Nelson Elliott. Two 10-Gallon Cans.	WAGON. Hiram Poffenberger. 10-Gallon Can.	MILK SHOP. Mrs. Henry Carpenter. 2-Gallon Bucket.	RAVEN WOOD DAIRY. Mrs. D. L. Buxley. 12 and 15-Gallon Cans.	WAGON. John D. Crawford. Two 10-Gallon Cans.	SHADY ELM SPRING DAIRY. W. H. Kendall. Two 10-Gallon Cans.	WAGON. J. F. Stine. Two 10-Gallon Cans.	
CHEMICAL ANALYSIS (Per Cent.)									Legal Stand'd
Total Solids	10.53	11.59	12.21	12.35	10.72	10.72	12.08	11.60	12.5%
Solids not fat	8.13	7.99	8.41	9.14	7.12	7.93	8.28	8.10	
Butter fat	2.40	3.60	3.80	3.21	3.60	2.83	3.80	3.50	3.5%
Coloring	0	0	0	0	0	0	0	0	None
Preservative	0	0	0	0	0	0	0	0	None
Character of Milk	*	....	....	*	....	*			

Sample marked * are below the legal standard in fats and total solids.

Approved:

MARSHALL LANGTON PRICE, *Secretary.*

W. B. D. PENNIMAN, *Chemist.*

TYPHOID FEVER AT ORANGE GROVE STATION.

ORANGE GROVE STATION, July 20, 1909.

DR. MARSHALL LANGTON PRICE,
Secretary State Department of Health, Baltimore, Md.

Dear Dr. Price: I have the honor to submit herewith my report, entitled "Typhoid Fever at Orange Grove Station." This investigation was made at the home of Mr. Richard C. Norris, Orange Grove Station, Baltimore and Howard counties. The primal cause was the presence of two cases of typhoid fever on Mr. Norris' place. For several years sporadic cases of typhoid fever have occurred at Orange Grove Station. The present work extended over a period of four days—Jun 21, July 3, July 6 and July 7, 1909.

PRESENT OUTBREAK.

There are two cases of sickness at the present time on Mr. Norris' place, as follows:

1. Mrs. Richard C. Norris.
2. A colored child, May Lillian Scott.

Mrs. Norris was taken ill June 6. The colored child, May Lillian Scott, was taken ill June 14. The latter, aged 11 years, is now at the Maryland University Hospital.

PREVIOUS CASES.

1. Mr. Richard C. Norris, in 1901; also probably last January (January, 1909).
2. Mr. Norris' cook, Bridget McGroarty, September, 1907.
3. Mrs. E. C. Norris, aged 71 years, in November, 1907. Mrs. Norris died the following spring (April, 1908).
4. Miss Helen C. Corner, in November, 1908.

The two latter cases—Mrs. E. C. Norris and Miss Corner—were very mild.

OTHER CASES OF TYPHOID FEVER.

Several of the colored people employed on Mr. Norris' place give indefinite accounts of sickness, probably typhoid fever, four or five years ago.

John Scott, the colored man, has never had typhoid. Mrs. John Scott had mild typhoid fever when very small.

There are six children in the Scott family. A son, Purnell Scott, now 12 years of age, had "bowel trouble" when a baby. Purnell Scott also had "bowel trouble," which was probably typhoid fever, six years ago (1903).

Clinical Notes.

Two weeks prior to the date of Mrs. Norris' illness she had visited at Roland Park. On June 6, 1909, Mrs. Norris was taken sick.

About one week afterwards—that is, June 14, 1909—May Lillian Scott was taken sick. This colored child had not done any visiting nor had she been away from home prior to the outbreak of the disease. She only ran a temperature for nine days. The Widal test was twice made, with the following results:

First—June 16, 1909; negative.
Second—Positive.

In Mrs. Richard C. Norris' case the Widal test has been made three times, with the following results:

First—June 11, 1909; suspicious.
Second—June 16, 1909; negative.
Third—June 22, 1909; positive.

Earlier Data.

Mr. Norris' cook, Bridget McGroarty, came from Philadelphia. She had typhoid fever last September a year (September, 1907). The Widal test was positive.

Miss Helen C. Corner has been living on Mr. Norris' place for two and a half years. Miss Corner is a cousin to Mr. Norris. She had typhoid fever last November (November, 1908). Her case was a very mild one, yet the Widal test was positive

In the winter of 1908-09 Mr. Richard C. Norris had an attack of what was probably the respiratory form of the *grippe*. During this attack three Widal tests were made:

First—December 31, 1908; negative.
Second—January 1, 1909; suspicious.
Third—January 6, 1909; suspicious.

Sewage and Drainage.

Sewage and drainage are well provided for on Mr. Norris' well-kept country place. It would be difficult to see how an infectious disease could result from either of these sources.

The water-closet refuse is carried by a terra-cotta pipe to a small run about 450 feet from the house. The mouth or terminal opening of this drain pipe is 125 feet below the level of Mr. Norris' house.

Samples Collected.

Three samples of water and one of milk were collected for bacteriological analysis, as follows:

1. Dairy spring.
2. Upper ram spring.
3. Colt's field spring.
4. Milk, Mr. Norris' dairy.

These specimens had all been previously examined. Several reports are on file in the records of the State Board of Health.

BACTERIOLOGICAL ANALYSES.

No. 1—Dairy spring, Richard C. Norris, Orange Grove Station. Sample collected June 21, 1909. Recorded July 7, 1909. Bacteria per cubic centimeter, ærobic, 120. Colon bacillus, present in 1 and in 10 c. c. of water. For drinking, this water is bad.

No. 2—Upper ram spring, Richard C. Norris, Orange Grove Station. Sample collected June 21, 1909. Recorded July 7, 1909. Bacteria per cubic centimeter, ærobic, 30. Colon bacillus, not found in 1 or in 10 c. c. of water. For drinking, this water is good.

No. 3—Colt's field spring, Richard C. Norris, Orange Grove Station. Sample collected June 21, 1909. Recorded July 7, 1909. Bacteria per cubic centimeter, ærobic, 30. Colon bacillus, present in 1 and in 10 c. c. of water. For drinking, this water is bad.

No. 4—Milk, Mr. Norris' dairy, Orange Grove Station. Sample collected June 21, 1909. Recorded July 7, 1909. Bacteria per cubic centimeter, ærobic, 300,000. Colon bacillus, present in 1/1000 c. c. of milk. For use, this milk is bad.

GENERAL SUMMARY.

The sanitary conditions at the home of Mr. Richard C. Norris, Orange Grove Station, are good. The grounds are well kept and the buildings are in excellent condition. Sewage and drainage are well provided for.

The water supply is excellent. The milk supply, though it contains colon bacilli, cannot be condemned. Therefore, I have turned my attention to other modes of infection. The possibility of a typhoid carrier presented itself.

EXAMINATIONS FOR TYPHOID CARRIER.

Ten specimens of urine and ten of feces were collected and taken to the bacteriological laboratory and examined with reference to the possibility of a typhoid carrier among the ten persons residing either permanently or transiently on Mr. Norris' place.

The following is a detailed list of the ten persons, the color, age, sex, etc.:

1. Mr. Richard C. Noris, the landlord. Lives at the house. Had typhoid fever eight years ago, and in January of this year (1909) had la grippe and bronchitis, which was suspiciously like typhoid.

2. Mrs. R. C. Norris, one of the two present patients. Mrs. Norris was taken sick on June 6 with typhoid fever.

3. Bridget McGroarty, the cook. Came to Mrs. Norris' place in August, 1908.

4. Miss S. H., a boarder. Came to Mr. Norris' on May 24, 1909.

5. Miss M. H., a boarder. Came to Mr. Norris' on May 24, 1909.

6. Miss P., a visitor. Came to Mr. Norris' on June 11, 1909.

7. John Scott, colored. Has lived on the place 20 years. His child,

May Lillian Scott, has typhoid fever at the present time. The Scotts drink from their own spring, but occasionally drink at the house or from any spring on the place.

8. Laura Scott, colored, wife of John Scott. Drinks only from her own spring, which has never been analyzed.

9. Purnell Scott, colored, aged 12 years. Lives on the place, and has been working at the house (Mr. Norris') about one month.

10. John Brown, colored. Does not live nor eat on the place, but has worked on the place and done the milking for six weeks.

RESULTS OF EXAMINATIONS.

Nine sets of specimens—Nos. 1, 2, 3, 4, 5, 6, 7, 8 and 10—were negative for the typhoid bacillus. One set of specimens, those from Purnell Scott, colored, aged 12 years, and listeed as No. 9, were positive for the typhoid bacillus. Typhoid bacilli were only found in the feces specimen and not in the urine specimen.

Purnell Scott came to Mr. Norris' place to fill his present position on May 21, 1909. He has lived on Mr. Norris place all his life. In previous years Purnell Scott picked berries about Mr. Norris' place. Since May 21 of the present year he has been waiting on the table and washing the dishes at Mr. Norris' and at his own home.

Conclusions.

1. The colored boy, Purnell Scott, is a typhoid carrier. This fact accounts for the presence of typhoid fever at the home of Mr. Norris. Two cases of typhoid fever have resulted from this carrier:

a. Mrs. R. C. Norris.

b. May Lillian Scott.

2. Mr. Norris has been enjoined to forbid Parnell Scott from working about the table or handling raw food or vegetables until his gastro-intestinal tract shall have been deemed free from typhoid bacilli by bacteriological tests.

3. If typhoid-carriers would exert greater care as regards personal cleanliness, very few persons would be infected by them. The liberal use of soap and hot water or disinfecting the hands in a solution of bichloride of mercury after attending to certain very necessary animal functions, would obviate 99 per cent. of the danger. This simple method is worthy of trial in the case of "Typhoid Mary."

In conclusion, I desire to thank Mr. Richard C. Norris for the efficient aid which he rendered me throughout these entire investigations.

Respectfully submitted,

C. W. G. ROHRER, M. D.,
Medical Assistant.

TYPHOID FEVER EPIDEMIC IN CHESTERTOWN, JULY, 1909.

BALTIMORE, August 3, 1909.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health of Maryland,
10 *South Street, Baltimore, Md.*

Dear Sir: I have the honor to make the following report upon a typhoid fever outbreak which prevails at the present time in Chestertown, Kent county.

On Monday, July 26, you received a message at this office, stating that a mild grade of typhoid fever had attacked a number of the citizens of Chestertown, that it was rapidly spreading, and apparently had gotten beyond the control of the local health authorities.

On Tuesday afternoon, accompanied by yourself, I took passage on the Chestertown boat, reaching my destination at 7 o'clock in the evening. Dr. Harry C. Simpers, Health Officer, was at the wharf to meet us, and we sojourned to Dr. Simpers' office to discuss the situation and formulate our plans for a concerted attack upon the disease.

After the usual preliminaries, it was agreed upon that a meeting of all the physicians in the town be called at Dr. Simpers' office on the following morning at 9.30 o'clock. Such a step was necessary in order to ascertain definitely the number of cases of typhoid fever and the portions of the town especially invaded by the disease.

CALL MEETING OF PHYSICIANS.

On Wednesday morning, July 28, 1909, the physicians of Chestertown met in a body at Dr. Simpers' office. The following were present: Dr. Whaland, Dr. Graham, Dr. Dodd, Dr. Simmons, Dr. Simpers and Dr. Hines, making a total of eight, including yourself and the writer. The meeting was called to order by yourself, and a "census" of the typhoid fever patients in the town and community was taken, the data being furnished by the several attending physicians.

NUMBER OF CASES REPORTED.

Neither Dr. Graham nor Dr. Whaland had attended any cases of typhoid fever, and for that reason those gentlemen were excused shortly after the opening of the session. Dr. Hines was the first on the list. He gave definite data in eight well-defined cases, and additional data in two suspicious cases. These latter were regarded as typhoid fever, thus making a total of 10 cases contributed by Dr. Hines. Four cases were reported by Dr. Dodd, six by Dr. Simpers, and twelve by Dr. Simmons, making a grand total of 32 cases of typhoid fever in Chestertown and vicinity. Three of these cases should be counted out, as they are sporadic cases, occurring in the Chestertown suburbs. This leaves a total of twenty-nine cases of typhoid fever in Chestertown.

Incidence of Drinking Water.

Of these twenty-nine cases of typhoid fever occurring in Chestertown, twenty-five used town water, three obtained their water supply from private wells, and one, it is alleged, drank nothing but distilled water from the town ice plant.

Already the weight of evidence points towards an infected water supply as a probable cause of the present outbreak of typhoid fever in Chestertown.

Milk Supply.

Fourteen of the cases of typhoid fever, or about 50 per cent., used milk from Mr. Walter T. Morris' dairy; two of the patients used milk from Col. Albert Story's dairy; one from both Morris' and Story's dairies; two at the hotels where they boarded, namely, the Voshell House and Mumford Hotel; while for the remaining four patients, if they used milk at all, the source of the milk supply is not stated.

The variability of the milk supply is suggestive that milk is not an etiological factor in the epidemic outbreak of typhoid fever in Chestertown.

Ice-Cream.

Practically all of the typhoid fever patients consumed ice-cream to a greater or lesser extent, purchased at various places, so no connection whatever could be traced between the consumption of ice-cream and the present outbreak of typhoid fever.

Other Foods.

Full data were not obtainable, but so far as our investigation goes no case of typhoid fever has been traced to an infected food supply.

Color, Age and Sex.

Of the 29 typhoid fever patients, 26 are white and 3 colored. Thirteen are adults and 16 are children. The eldest is aged 55 years; the youngest, 2½ years. With regard to sex, 14 are males and 15 females.

Date of Attack.

The chronological order of onset of the typhoid fever cases at Chestertown in the months of June and July, 1909, is as follows:

Date.	Cases.	Date.	Cases.
June 12, 1909	1	July 16, 1909	1
June 13, 1909	1	July 17. 1909	1
June 28, 1909	1	July 18, 1909	3
July 3, 1909	1	July 19, 1909	1
July 4, 1909	1	July 20, 1909	1
July 5, 1909	4	July 21, 1909	3
July 6, 1909	1	July 22, 1909	1
July 10, 1909	1	July 24, 1909	1
July 12, 1909	1	July 27, 1909	2
July 15, 1909	2	July 29, 1909	1
Total			29

It will be noted from the above table that the greatest number of cases developed in the month of July. Only three cases occurred in the month of June. The second and third weeks of July were especially prolific in this respect.

INSPECTION OF THE CHESTERTOWN WATER SUPPLY.

Ordinarily the people of Chestertown use about 125,000 gallons of water a day. The water supply is obtained from an artesian well operated by a steam pump, and from pool No. 1, built over the old school spring. The well and spring supplies are augmented by a spacious reservoir built on College Hill, and also by a second, or lower pool. This second, or lower pool, which has been under suspicion since the beginning of the investigation, furnished about 30,000 of the 125,000 gallons of water used daily by the inhabitants algal growth, one of the chlorophyceæ—*anabaena flos-aquae* by name of Chestertown. In addition, there are also a number of private wells used by the town people.

The Chestertown waterworks are located in a vale, surrounded by a number of slight elevations. Passing through the center of this little valley and within 15 yards of the town pool, is a small stream which empties into the Chester river. The unusually high tides which occurred in June of the present year, and the heavy rains, caused this stream to overflow its banks and fill with water the gully in which the waterworks are situated. The walls of the lower pool are not water-tight, as it has in part a marsh bottom, and a pretty extensive leak has also occurred in the southeast side. During the June freshets these factors allowed an intercommunication between the surface water and the water contained in the lower pool. An —is seen on the surface of the puddles in the gulley, and also on the surface of the water contained in this pool.

The artesian well and the upper pool are thoroughly protected from surface drainage. A six-inch sewer pipe, which carries off the surface drainage from a portion of the town, empties into the gully about midway between the pumping station and the lower pool. It is not believed that this pipe is an element of danger.

The town reservoir is beautifully located, and the possibility of its contamination is practically *nil.* Obviously, its cement walls are impervious and its protection from surface drainage secure.

Inspection of the Chestertown Watershed.

The families living in close proximity to the reservoir were canvassed, and no suspicious case of fever or diarrhœal trouble of recent or remote date was discovered. The reservoir is used merely for storage purposes.

A house-to-house canvass was also made of the dwellers on either side of the gully in which the waterworks and pools are located. No suggestive case of sickness was detected. One of the four slaughter-houses contained in the town, and several surface closets are located at the top of the slope.

Drainage and Sewage Disposal.

Chestertown has a sewerage system, with which a majority of the houses are connected. The town sewer empties into the Chester river beneath the bridge leading into Queen Anne's county. The outlet of the sewer pipe has been damaged, consequently the sewage is not discharged a sufficient distance from the river bank.

The break in the sewage pipe, causing a deposition of the town sewage and offal along the bank of the river, renders it possible that the lower pool may have become infected from this source during the high tides and heavy rains which occurred in the month of June.

I have been informed that the sewer pipe will be promptly overhauled and repaired.

A number of the residences in Chestertown have both house closets and surface closets, while others are dependent upon surface closets alone. These latter are a menace to health by reason of flies and pollution of wells and springs by surface drainage.

This matter has been taken up by the Board of Town Commissioners—Messrs. Carroll, Bordley and Duyer—and an ordinance passed to the effect that on and after September 1, 1909, only box toilets shall be used in Chestertown. The Town Commissioners have also ordered that the excrement be sprinkled at regular intervals with air-slaked lime or other disinfectant.

Meeting of Town Commissioners.

On Wednesday evening, July 28, 1909, at 7.30 o'clock, I met the Town Commissioners in special session. The whole field of inquiry concerning the present typhoid fever outbreak was discussed, as well as a variety of additional topics, including sewage disposal, dairy inspection and flies as carriers of disease.

At this meeting it was agreed upon that the Town Commissioners furnish their team, and that they and the town bailiff (Mr. Cooper) accompany me in the collection of samples of milk and water on the following morning, July 29, 1909.

COLLECTION OF SAMPLES.

But one sample, chemical and bacteriological, of milk was taken, namely, from Mr. Walter T. Morris' dairy. We did not succeed in coming up with the other dairyman, Col. Albert Story. This I regard as of but slight consequence, because samples from both of these dairymen had been collected by Dr. Simpers a few days previously and sent in for analysis.

Fourteen samples of water were collected—both chemical and bacteriological samples in 11 instances, and in 3 instances only chemical samples. I append here a tabulated list of these samples of milk and of water:

MILK.

No. 1—Walter T. Morris' dairy, known as Locust Hill dairy, Chestertown; John Latham, driver; July 29, 1909.

WATER.

No. 1—Public well at ice plant, Chestertown; R. G. Nicholson; July 29, 1909.

No. 2—Public well, known as "Santiago," Chestertown; July 29, 1909.

No. 3—Public well at Hall property, Calvert street, Chestertown; July 29, 1909.

No. 4—Public well at Calvert street, Bethel Church, Chestertown; July 29, 1909.

No. 5—Public well, John F. Howard's, High street, Chestertown; July 29, 1909.

No. 6—Private well, Commissioner Wm. T. Duyer, Chestertown; July 29, 1909.

No. 7—Public supply, New Pool, condemned, Chestertown; July 29, 1909.

No. 8—Private well, M. E. Parsonage, Chestertown; July 29, 1909.

No. 9—Public spigot at pumphouse, main town supply, Chestertown; July 29, 1909.

No. 10—Private well, Charles S. Smith, Chestertown; July 29, 1909.

No. 11—Private well at Electric Light plant, Chestertown; July 29, 1909.

No. 12—Private well, Merrick Clements, Chestertown; July 29, 1909.

No. 13—Private well, Washington College, Chestertown; July 29, 1909.

No. 14—Private well, Harry Burke, Chestertown; July 29, 1909.

Both chemical and bacteriological samples were taken in all but Nos. 10, 11 and 12.

INSPECTION OF ABATTOIRS.

On Thursday, July 29, 1909, accompanied by the Town Commissioners, I inspected the four abattoirs, or slaughter-houses, furnishing meat to the people of Chestertown. All four slaughter-houses are situated in the town itself, and considerable complaint has been raised by the citizens relative to the nuisances which these places create. The slaughter-houses are operated by the following gentlemen:

1. Robert Moffett.
2. R. Thompson.
3. Daniel W. Haddaway.
4. C. W. Copper.

These four gentlemen had several times been requested by the Town Commissioners to clean up their shops, but only two—Messrs. Thompson and Copper—had taken steps to obey this mandate. Consequently I found Mr. Thompson's slaughter-house, and also Mr. Copper's slaughter-house, in better condition than Mr. Moffett's and Mr. Haddaway's. All four, however, were improperly kept and condemned as insanitary. Buzzards and dogs frequented Mr. Moffett's and Mr. Haddaway's, and at the latter place entrails were found buried in a manure heap.

INSPECTION OF DAIRIES.

On Thursday evening, July 29, 1909, accompanied by Officer Cooper, I drove over into Queen Anne's county and inspected Col. Albert Story's dairy. Colonel Story has a fine herd of 40 cows, largely Jersey stock, with two or three Holstein cows among the number. Colonel Story's dairy is in excellent condition. The buildings are large and in good repair, and the cow stables thoroughly ventilated. The dairy utensils are kept scrupulously clean and sweet. Colonel Story's dairy is known as Round Top Dairy, Chestertown, R. F. D.

On Friday morning, July 30, 1909, I inspected Mr. Walter T. Morris' dairy. Mr. Morris' dairy goes by the name of Locust Hill Dairy. Mr. Morris has one of the finest herds of Guernsey cattle in the State.

I found Mr. Morris' dairy in excellent sanitary condition.

Second Meeting, Town Commissioners.

On Thursday evening, July 29, 1909, at 7.30 o'clock, I held a second conference with the Board of Town Commissioners. At this meeting I informed the Town Commissioners that we had completed our investigations and had reached the conclusion that the present epidemic outbreak of typhoid fever in Chestertown is due to an infected water supply. Practically every foot of the ground had been gone over, and this opinion had been formed after mature deliberation and a thorough sifting of the mass of accumulated evidence.

I warned the Town Commissioners that, in order to suppress the present outbreak of typhoid fever, the people of Chestertown should boil their drinking water. Protection against flies and other insects and thorough washing of all raw fruits and vegetables were also advised as additional protective measures.

Thorough disinfection of typhoid fever excreta on the part of physicians attending the cases was urged by yourself at the initial meeting held Wednesday morning, July 28, 1909, at Dr. Simpers' office.

At this second meeting with the Town Commissioners my opinion was asked concerning the four Chestertown abattoirs. I reported all of them in an unsanitary condition and a menace to the public health. I also urged that the owners be instructed to clean up their premises at once and keep them clean, and that an effort be made to have all slaughter-houses removed beyond the corporate limits of the town within a specified time. A single well-kept slaughter-house, to be used alternately by all, would be an ideal method.

Specific Cause of the Outbreak.

In the forenoon of Friday, July 30, 1909, accompanied by Officer Cooper, I again endeavored to locate definitely the source of the infectionof the Chestertown public water supply. At 11 A. M. we had solved this hitherto intricate problem and were able to put our finger, as it were, upon the real cause of the outbreak.

On or about June 12, 1909, a case of typhoid fever developed in a family living at the upper end of the little valley in which the waterworks and pools are located. This typhoid fever patient, a boy aged 4 years, accompanied by his brother, who also developed the disease later, had visited at Rolph's wharf, and also at Clayton, Del., about three weeks prior to the onset of the disease.

A physician was not called until June 22. The illness was not recognized as typhoid fever until June 30. Prior to June 30 the stools and urine were not disinfected, but were thrown into a surface toilet situated at the top of the slope bordering the upper end of the gully in which the town water supply is located.

ADDITIONAL WORK PERFORMED.

On Thursday, July 29, 1909, I made several other inspections, accompanied by Officer Cooper:

(1) Colonel Vannort's closet. This is a surface closet provided with a shallow box, and is built about five feet from his neighbor's (Captain Crane's) kitchen window. One case of typhoid fever (Minnie Donald, colored servant) developed in Captain Crane's household. The patient was taken to the City Hospital, Baltimore. Owing to contamination, especially by means of flies and other insects, I pronounced Colonel Vannort's toilet a menace to his neighbor's health.

(2) Ice plant. I inspected the town ice plant, and found everything in good condition, excepting the cover of the well from which the water utilized is obtained. This was badly in need of repair, and I was informed that steps will be taken for its immediate correction.

(3) Well at M. E. Parsonage. Here the pump stock itself is decayed and leaks badly, allowing water which runs over the well cover to re-enter the well.

(4) Mrs. Crew's well, High street, near Kent. Well not protected by a sufficient cover, and down in the well itself, which is shallow, a large amount of debris is seen.

SUMMARY AND CONCLUSIONS.

(1) The primary cause of the present outbreak of typhoid fever in Chestertown is an infected water supply. The focus of the inspection has been traced to an imported case of typhoid fever occurring at the upper end of the gully in which the town waterworks are located. This case developed about the middle of June, and was not recognized as typhoid fever until the disease had reached its fastigium. Consequently, the stools and urine were not disinfected, but were thrown into a surface toilet situated at the top of the slope bordering the gully.

(2) Ordinarily there is a 22-inch tide in the Chester river at Chestertown. The heavy June rains, coupled with the unusually high tides reported to have occurred about the middle of June of the present year, enabled typhoid bacilli to effect an entrance into the town water supply.

(3) The new or lower pool, which leaks badly, is doubtless infected, and probably the artesian well and also the upper pool. Up until Saturday, July 24, 1909, water from the lower pool had been mixed with the main supply, thus infecting the entire public water supply of Chestertown.

(4) The safety of the people of Chestertown lies in the *boiling of their drinking water*. Milk and other raw foods apparently have no etiological bearing on the epidemic outbreak of typhoid fever now

prevailing in Chestertown. Flies and direct contagion doubtless play a small part in the spread of the disease, as a few of the cases are evidently secondary ones.

(5) The importance of *thorough disinfection of all excreta from typhoid fever patients* was indelibly impressed upon the town physicians by yourself at the preliminary meeting held Wednesday morning, July 28, 1909.

(6) Before leaving Chestertown Friday evening, July 30, 1909, I visited the offices of the three Chestertown papers, viz., *The Kent News, The Chestertown Enterprise* and *The Chestertown Transcript,* and impressed upon the editors the vast importance of utilizing the columns of their respective papers in urging the people of Chestertown to *boil their drinking water,* protect themselves as far as possible against flies, and to thoroughly wash all raw vegetables and fruits before eating.

(7) Mrs. John Latham, wife of the man who drives Mr. Walter T. Morris' dairy wagon, living on Worton road, about four miles from town, is critically ill with typhoid fever. This sporadic case of typhoid fever has no bearing upon the Chestertown epidemic. Mr. Latham has been ordered to relinquish his position as driver of Mr. Morris' dairy wagon and to do no work whatever about the milk dairy so long as there is sickness in his family.

(8) In conclusion, I wish to thank Dr. Harry G. Simpers, the efficient Health Officer of Kent county, the honorable Board of Town Commissioners and Officer Samuel Cooper for their hearty co-operation in waging a warfare against the present epidemic outbreak of typhoid fever in Chestertown, Kent county.

Respectfully submitted,

C. W. G. Rohrer, M. D.,
Medical Assistant.

AN OPINION UPON THE OUTBREAK OF TYPHOID FEVER AT ST. VINCENT'S INFANT ASYLUM, BALTIMORE COUNTY, MARYLAND, DURING JULY AND AUGUST, 1909.

Introduction.

Improved means of bacteriological analysis, especially in isolating the typhoid bacillus from the blood and discharges, have thrown a great deal of light upon the origin of epidemics many of which must before have necessarily remained unexplained. We have in particular learned to realize the importance as well of the existence of "carrier cases."

While no one can fail to recognize the importance of improved means of bacteriological analysis in investigating and controlling epidemics, it is important that our improved knowledge should not be allowed to overshadow the experience of the past in the more common means of transmitting typhoid fever. In epidemiology, like law, there is a constant tendency to be mislead by circumstantial evidence and to jump to obvious conclusions without mature and careful consideration of all the facts. In epidemiology, as in the courts, we want not only the truth, but the whole truth, before arriving at conclusions. The epidemic described in this opinion, where a carrier case was the obvious explanation of the epidemic and yet where there is strong probability that the carrier case was only indirectly if at all responsible, makes this case appropriate to call to the attention of sanitarians what must always be present in the minds of judges and good criminal lawyers, namely, the intrinsic weakness of circumstantial evidence, unless *all* of the evidence is given due weight and consideration.

The opinion upon this epidemic is divided into five parts—first, preliminary investigaton; second, preliminary opinion; third, final investigation; fourth, final opinion; fifth, recommendations.

I. Preliminary Investigation.

The preliminary investigation of the epidemic of typhoid fever at St. Vincent's Asylum was made on September 3 with Dr. Henry A. Naylor, Health Officer, Third district, Baltimore county.

The institution and grounds were found to occupy an area of about fifty acres of good farming land located upon a moderate rise, on the highest part of which was the main building. There was a gentle but sufficient slope of the ground away from the building on all sides. In addition to the main building, there was a stable, with its appropriate yards and buildings, and a cottage occupied by Mr. Welch, the farm superintendent, and his family.

There were two wells on the grounds, one in the rear of the superintendent's house, which supplied the superintendent and his family and also supplied the dairy for washing the cans, and the other, in the rear of the main building, which furnished the main water supply. The water from the latter well was pumped by a small engine into a tank in the top of the building, and from there delivered to the various toilets.

The sewer pipe passes diagonally from the building to the northwest and discharges into a Waring disposal system. The disposal plant was underdrained, but practically all of the effluent was disposed of by absorption.

The buildings and sanitary arrangements are shown on the accompanying diagram.

All of the milk and green vegetables were produced on the place.

In inquiring into the history of the epidemic, it appeared that the first case of the year was taken sick about the middle of July. The disease was not at once recognized, and after an interval of from ten days to two or three weeks the case was removed to a hospital.

No especial importance was attached to this case, and a further interval of two weeks and one day elapsed after the removal of the first case before any other cases developed. The probable date of onset of the next case was August 19. Two cases probably developed on this date, though the nature of their sickness was not at once recognized. From this date onward cases developed at intervals of two or three days until at the time of the preliminary investigation there had been nine cases among the resident boys at the institution, and two among the boys from the town branch.

Milk and other foods were shipped from the institution to the town branch, and also used by the superintendent of the farm and his family. There were thus two excellent series of controls—one on the institution grounds, the Welch family of twenty-seven members, and the boys at the town branch, who numbered at this time about a hundred.

Full data were collected concerning the eleven existing cases of typhoid fever, and samples of water of the two wells taken at their sources in from the delivery pipes, and samples of milk from the dairy. This completed the preliminary investigation.

The preliminary opinion was issued September 15, and copies were furnished to Dr. James F. H. Gorsuch, County Health Officer; Dr. Henry A. Naylor, District Health Officer, and Dr. Charles O'Donovan and others.

II. Preliminary Opinion.

I am enclosing copies of bacteriological analyses of the water supplying St. Vincent's Infant Asylum. It appears, from the two samples taken from the well supplying the institution for drinking purposes, the colon bacillus was present in one and was demonstrated by the presumptive test in the last sample taken. It was also present in both samples taken from the dairy supply. It was also present in the well supplying the superintendent's house. It also appears that all of the well water supplying the institution is polluted in greater or lesser degree. The bacteriological analysis has shown, at any rate, the possibility of the drinking water being the source of the epidemic of typhoid fever which was prevalent at the institution during the month of August. It is far from showing, however, that the well water was the cause of this outbreak, even though the well was admittedly polluted. In order to definitely settle this question, I am writing for further data, the necessity of which will be later pointed out.

I will recapitulate briefly the evidence now at hand regarding the origin and source of the epidemic. As far as the fixed population of the institution is concerned, it appears there are about 65 to 70 boys who live in the institution, between the ages of 7 and 13 years. There are 7 Sisters and 2 boys and 3 men employed about the farm, the former resident in the asylum. The average age of the Sisters is high, probably about 60 years. There is one Sister about 23 years of age. None of the Sisters have been attacked. This fact, however, is not of very material significance, as the bulk of persons who reach the age of 35 years under past sanitary conditions have been immunized by a previous attack. About June 1 the population of the institution was increased by the children from the town asylum, who arrived in successive groups during the month of June and remained in the institution from June to August 7. With these visitors to the instituion, there were from 85 to 90 infants, and 85 to 90 children, making a total of 180 children who remained at the institution during practically three months.

It appears clear that the first case was taken sick during the latter part of July. This boy, Edward Hussey, aged 12, has been a resident of St. Vincent's Asylum for at least three years, and has never been away from the institution. The approximate date of his onset is given by St. Joseph's Hospital as July 27. The Sister Superior dates his attack back to July 15. He was admitted to St. Joseph's Hospital on August 4, and became convalescent between the 1st and 3d of September. An interval of at least four weeks elapsed between the onset of his case and that of the next case, which occurred about August 19. It is, of course, highly important to trace the origin of this boy's attack; in the meantime a question of almost equal importance arises, *Was Edward Hussey's disease the cause of the subsequent cases?* As already appears, he left St. Vincent's Asylum on August 4, which was the last date under ordinary conditions in which he could have been a source of infection to the other boys in the asylum. Allowing an average period of two weeks incubation, which would bring the date to August 18, it will be seen that none of the subsequent cases could be traced back to an earlier date than August 19, and, allowing the maximum period of three weeks' incubation, which would bring us to August 25, it appears that six of the cases were infected either on or subsequent to August 25.

The chronology of the cases as they appeared among the permanent residents of the institution was as follows, giving the most probable date of onset:

On July 27—Edward Hussey, aged 12.
On August 19—Thomas George, aged 8.
On August 23—Gilbert Connelly, aged 9.
On August 23—Valentine Febrick, aged 8.
On July 23—James O'Connell, aged 10.
On August 25—Harvey Elliott, aged 9.
On August 25—George McCormick, aged 9.
On August 27—Thomas Kelly, aged 9.
On August 27—Wheeler Carter, aged 8.
On August 31—Austin McMahon, aged 9.

A total of 10 cases. Of the two boys infected while visitors at the institution, M. Bayley was taken sick on August 19, and Roosevelt Steinstaufer was taken sick on August 25.

To take up now the articles used for internal consumption, in which the infection must lie, it appears the groceries supplied the institution are purchased by the town branch from Bentley & Shriver, and are also used in the town branch. As all of this, with the exception of jellies and condiments, which are sold in glass vessels, are cooked before eating, and as the same groceries are used in both the town and country branch, they can be safely ruled out of any etiological relation to the epidemic in question.

Bread is supplied from Reynolds' bakery, and is also probably used in both branches. Ice-cream is bought very rarely, and is sent out from the town institution. All of these products are consumed in common in the two institutions, and it is to be noted that among the larger and more susceptible population of the town institution that not one case has so far been infected. The ice used at the institution is from the Mt. Hope pond. It is said not to be used in the drinking water, but only for cooling purposes. This pond, from its situation is undoubtedly polluted. The ice, however, is cut during January or the latter part of February. As the maximum viability of the typhoid bacillus in ice has never been found to exceed 100 days, the ice, even if cut on the last day of February, could only be infectious up to the last day of May, and could only account for cases arising during the month of June, and so can properly be absolutely excluded from any relation to the typhoid epidemic.

Having excluded all these more remote sources of infection, we are brought to the consideration of another important source of supply, namely, the milk. The institution owns 19 cows and produces all its own milk. The stable is located several hundred yards from the main building, in one corner of which is the dairy. This dairy is supplied with water from the well, 26 feet deep and 14 feet in diameter, in the rear of the house occupied by Mr. Welch, who is superintendent of the farm, and his family. In this dairy the cans are washed and dried and the milk is cooled after milking. A sample of water from this pump, dated August 30, contained 1,800 ærobic organisms, the colon bacillus being present in 10 c. c. The water is reported as very bad. The milk contained 1,800,000 bacteria per c. c., and the colon bacillus was absent. This is also reported as bad. The well supplying this pump contains 600,000 ærobic organisms, and colon bacillus was present in 1 and 10 c. c. This is also reported as very bad. We have, therefore, a milk which can be classified as dirty and which is produced in a dairy with a polluted well. All the conditions being present for infecting the milk, it is important to ascertain if this milk was the source of the epdemic.

The commonest way in which milk can be infected is through washing the cans with infected water. Next in order of frequency is direct transference of the infection from the hands of some one nursing or in contact with the typhoid patient. Other means less common are the transference of the infection by flies, or infection through a carrier case.

In order to determine the relation, if any, of the milk supply to the epidemic, the first question to determine is, *Did the Welch well contain the typhoid bacillus at any time during the month of July and August,* 1909? The analysis has already shown that it did contain the colon bacillus subsequent to that date, and showed other evidences of sewage contamination. It appears that this well is used for drinking purposes, and has been used in the past by 27 people, children and adults, among the former of whom there must be, with little doubt many susceptible persons. Not one of these individuals has contracted typhoid fever, so I think we can assume, in connection with the high attack rate among the 70 individuals in the institution proper, that, whatever forms of pollution entered the well during July and August, the typhoid bacillus was not among them.

This brings us to the second question, *Was the milk infected in any other way than through the water during July and August,* 1909? Though we have no definite data on this point, it appears probable that the 27 individuals mentioned as using the well water, among whom are undoubtedly many non-immunes, also used the milk supplied by this dairy during July and August without any untoward results. Tracing this milk to the institution proper, we find that milk was not furnished the inmates for drinking purposes, but was used in tea and coffee, and occasionally, but rarely, on oatmeal and fruit. This milk was also shipped regularly to the town branch. It is not known how many persons remained in the town institution during the period from June 1 to August 1, but there were probably a considerable number. It must be noted, moreover, that all of the conditions noted as possible causes of infection in the milk would undoubtedly be operative in subsequent months during which milk has been continually shipped to the town branch without any cases of typhoid fever resulting. It is impossible to believe that the large number of susceptible persons in the town branch who have been using milk without any bad consequences during and subsequent to August would all have escaped typhoid fever if the milk had at that time been infected. For these reasons the milk can be excluded with almost mathematical certainty. This narrows the investigation to raw foods produced on the place, the water supply, or an infection of the food during its preparation or handling. It appears that all of the raw foods, such as lettuce, tomatoes, radishes, etc., are produced on the place, and are never bought from the markets. Many of these foods undoubtedly became ripe and were used during July and August. It seems most likely that these raw foods were also used by the 27 persons in the Welch domicile, who have already been referred to in connection with the milk and the Welch well, but this fact must be definitely ascertained. If it can be shown that these 27 persons also used these raw foods without injurious effects, we can exclude the raw vegetables with a fair degree of safety, but not as conclusively as the milk can be excluded. In order to reach the same degree of certainty in dealing with the raw vegetables, which we have in dealing with the milk, we would have to ascertain if the raw vegetables were frequently or at times shipped to the town branch and consumed there. The first additional data we must have, therefore, in locating the source of this outbreak is—first, were the raw vegetables eaten by members of the Welch domicile; second, were the raw vegetables shipped to the town branch?

To revert now to the water supply, there are two wells upon the institution grounds—one in the rear of the Welch premises, which supplies the dairy, 27 feet deep, with a diameter of 14 feet (?), and the one in the rear of the institution, which is the main source of supply for the inmates, with a depth of 29 feet and a diameter of 14 feet (?). Strong reasons have already been given for excluding the Welch well from any part in the trouble. The well furnishing the main supply being about 100 yards from the rear of the main building, is well located; its surroundings are good; the site apparently one of the highest points in the surrounding neighborhood. The water from this well is drawn by a gasoline pump into the building and discharged into a tank in the highest part of the building. This tank supplies the various flush closets, the wash basins and the spigots in the kitchen and laundry. As the drinking water is not iced, it is generally drawn in pitchers directly from the well, and the boys generally go to the well to drink. The present pollution of the well, if not proceeding from some distance, which does not seem probable, can probably be accounted for by a break or stoppage of the sewage pipes, which occurred at the latter end of August. It was necessary at that time to dig up the pipe and make a number of necessary repairs. Undoubtedly the sewage during this break or stoppage percolated through the ground for some distance, and no doubt a portion of it found its way into the well. It is true that this difficulty was recognized at a time when the epidemic had already reached its heighth, but it is probable that if defects in the sewage pipe existed, which caused it to be necessary to dig up and repair the pipes during the latter end of August, that a considerable leakage of sewage occurred before that date. This would appear an obvious explanation of the epidemic. If we could ignore the origin of the Hussey case, the obvious steps in the causation of the epidemic would be: First, the entrance of the discharges from the Hussey case into the general sewage system during the one week or two weeks he remained in the institution (up to August 4). Second, the percolation of sewage into the well in sufficient quantity to cause its pollution about August 12. Third, the development of subsequent cases from August 19 to 31, all of which could be accounted for by pollution of the well dating in the neighborhood of August 12, and which would account readily for the subsequent cases. Here, however, inconsistencies enter into the case not explainable by the theory of the pollution of the water supply. This is the much higher attack rate among the resident boys as compared with the visitors. Including the Hussey case, we have ten cases attacked among the resident boys, as against two among the visitors. Taking only the cases arising in August, we have nine cases among the resident population, as against two among the visitors. While erratic differences in the attack rate do occur among different classes of individuals exposed to identical sources of infection in typhoid epidemics, still the difference in this instance is too great not to have some significance. As already appears, there were 180 visitors in the institution during June, July and August, and of these two were infected, while of those 65 or 70 boys in the institution 10 were infected. The average ages of the boys in the institution were from 7 to 13 years. The average age of the visiting boys was probably about 5 years higher. The analysis of 1,114 cases taken from the laboratory records of the State Board of Health has shown that the period of greatest susceptibility among children is from 10 to 15 years. It becomes lower in each preceding quinquennial period. In the analysis cited 8.44% of the cases occurred in the quinquennium from 5 to 10, and 14.90% in the quinquennium from 10 to 15. There is, however, in Maryland 11.25% of the population of the ages 5 to 10, as against only 10.75% at the ages 10 to 15. We can fairly assume that the average age of the resident population of the institution was from 5 to 10, and that of the visiting population from 10 to 15. On this basis, the attack rate of the residents as compared to the visitors would be in the same ratio as 75 to 139, but as there were nearly three times as many visitors as there were residents, the ratio in actual cases should be as 75 is to 417, and for the 10 cases among the residents there should have been 55 among the visitors. This disproportion is too great to be accounted for by natural variations in the attack rate.

I think it absolutely essential in order to lay the cause of the epidemic upon polluted water to show that the bulk of the visiting population left the institution previous to August 12. Another missing link, therefore, in the chain of evidence is, Did the bulk of the visiting population leave the institution previous to August 12? If it can be shown that the bulk of the visiting population did not leave the institution until after the middle of August, we must fall back upon the final problem to be considered, namely, *infection of the food during its preparation or handling.* The food may be infected during its preparation or handling, first, by cases of typhoid fever in the ambulant stage; second, by those nursing or in close contact with typhoid patients; third, by typhoid carriers, who unwittingly carry about in their bodies the typhoid bacillus, following an attack of typhoid fever, which frequently has occurred weeks or months before, and not very infrequently years previous. It appears that two persons in the institution are regularly engaged in preparing and handling foods. These are the cook, Mrs. Laurenia Kilroy, and the laundress, Mrs. Katherine Spitzer. Mrs. Spitzer has also carried on the offices of dining room and pantry maid for several months up to the past three days. It appears that some of the boys are also called upon occasionally to assist in the work in the kitchen and pantry, and this work includes the cutting and buttering of bread, which is always furnished the boys buttered. It is possible that Edward Hussey performed some of these services during the early part of his illness. It has already been stated that he cannot be connected with the bulk of the cases arising in the institution, as far as direct contagion is concerned.

As regards the previous history of the cook and the laundress, I find the cook, Mrs. Kilroy, had typhoid fever eight years ago in Ireland at the age of 17, and was sick eight weeks. She is now 25 years old. The laundress, Mrs. Spitzer, had quite a severe attack of typhoid fever about 15 years ago. It is, in my opinion, important to ascertain if either of these individuals are typhoid carriers, and for this reason I recommend that separate specimens be taken of the urine and intestinal discharges and inoculated into the lactose bile medium.

To recapitulate, the following data is necessary before a definite opinion can be given by this office and measures taken and advice given for the future protection of the institution.

First—Whether raw vegetables were eaten by members of the Welch domicile.

Second—Whether raw vegetables were shipped to the town branch and there consumed.

Third—Did the bulk of the visiting population leave the institution before August 12, 1909?

In order to ascertain if the cook and laundress are now bacillus carriers, I will be glad to furnish Dr. Ensor with the necessary lactose bile outfits.

If you can secure for me this missing data, I think I will have no difficulty in locating the origin and source of the outbreak.

It will also be of great assistance if a list could be secured of the persons outside of the institution who have been using the supply well during the month of August, and whether or not an attack of typhoid fever has resulted in any case.

III. Final Investigation.

The final investigation included the collection of the missing data, the examination of the stools and urine from two persons engaged in handling and preparing food, and the collection of a large sample of water (one quart) for the isolation of the typhoid bacillus, and the collection of specimens of blood from the convalescents for agglutination tests with the typhoid and paratyphoid organisms.

The samples of urine and feces were collected at the institution by Dr. Ensor. The water sample and samples of blood from the convalescents were collected by Dr. Rohrer, October 4, and the missing data were furnished by Dr. O'Donovan.

The final opinion was issued October 12, and copies furnished to Dr. James F. H. Gorsuch, County Health Officer; Dr. Henry A. Naylor, District Health Officer; Dr. Charles O'Donovan, and others.

IV. Final Opinion.

Due inquiry having been made into the points at issue, it appears: First—That the raw vegetables were eaten by the members of the Welch family. Second—That the raw vegetables were shipped to the town branch and there eaten. Third—That the bulk of the visiting population left the institution previous to August 12.

This additional evidence enables us to rule out one of the points at issue, namely, the raw vegetables, and leaves us to consider only: (a) Infection of the water supply; (b) infection of the food during its preparation or handling. Subsequent investigation discloses these important facts. The trouble among the visiting boys was confined to the last batch, 90 in number, who remained in the institution from August 3 to August 24. Of even greater significance is the development of five additional cases among the visiting boys, making seven cases in all among the visitors. The chronology of these cases is as follows:

On August 19—M. Bayley.
On August 25—Theodore Steinstauffer.
On September 4—Robert Raven, aged 8.
On September 8—Fred Young, aged 7.
On September 10—George Trammon, aged 8
On September 10—Edward Brotherhood, aged 6
On September 24—Michael Roeder, aged 6.

It appears that the ages of the visiting population from August 3 to August 24 ranged from about 1 to 2 years less than that of the residents, a difference too slight to have very marked influence upon the comparative attack rate. Assuming the average ages of the visitors and residents to be the same, taking the number of residents at 70 and leaving out of consideration the first case attacked (Edward Hussey), the nine cases among the residents should have furnished cases among the visitors in the following proportion, 70 : 90 :: 9 : x, or about 12 cases instead of 9, as actually occurred. This proportion is perhaps not too low to be explained by differences in individual susceptibility, but the difference in chronology is suggestive. While all of the residents contracting typhoid fever were attacked during

August, 5 of the 7 visitors attacked became sick in September. It appears that some cause must exist for this difference in chronology among the two classes of boys. Two questions then arise: First—Can this chronological difference be explained on the basis of an infected water supply? Second—Can the chronological difference be explained by infection of the food during its preparation or handling?

In a previous opinion upon the outbreak, August 12 was fixed as the approximate date of infection of the well; this date should, however, be considered the latest date that could account for the development of the first of the cases due to this cause (on August 19).

If the date of leakage of the sewer pipe and the time of percolation of the sewage into the well be placed earlier than August 12, the difference in numbers and chronology between the resident and visiting boys could be readily accounted for. Typhoid bacilli were passing into the sewage pipe from the Hussey case from the date of onset of his disease (which has been placed as early as July 15 or as late as July 27) up to the date of his removal to the hospital in Baltimore. Admitting the sewer pipe to be leaking at the time Hussey's case appeared, the residents were drinking infected water from one to two weeks before the last visitors arrived. It is true that additional typhoid bacilli passed into the defective sewer pipe from subsequent cases until the pipe was repaired, in the latter part of August, the infection probably reached its height from the Hussey case, as the subsequent cases were removed very much more promptly to hospitals as soon as they were recognized. One additional fact of significance has come to light in this later investigation, viz.: *Additional cases ceased to develop a short time after the boiling of the drinking water began at the institution.*

This data about completes the evidence at hand as far as the drinking water is concerned, and we have left to examine the evidence bearing on infection of food during preparation or handling. Lactose bile outfits were furnished Dr. Ensor, and samples of the discharges of the two persons engaged in preparing and handling food were taken and sent to the bacteriological laboratory. These were reported by Dr. Stokes on October 4, 1909, as follows:

DR. MARSHALL L. PRICE.
Secretary State Board of Health.

Dear Sir: I hereby respectfully report upon the bacteriological examination of the urine and feces sent by Dr. C. D. Ensor, Station E, Arlington, Md. These specimens consisted of the feces and urine from Mrs. Kilroy and Mrs. Spitzer; occupation, housework at St. Vincent's Asylum, Baltimore county, Maryland.

Organisms of the paratyphoid group were obtained from both specimens of feces, and an atypical typhoid bacillus was obtained from the stool of Mrs. Kilroy. This bacillus produced a slight grayish growth on potato, and would not agglutinate at a dilution of 1/1000 with an immune serum, which will agglutinate our stock laboratory culture at a dilution of

1/100,000. This organism does agglutinate perfectly with a specimen of blood from which we have isolated a typhoid bacillus from the blood of this patient furnishing the test blood.

It would be interesting to obtain the blood of Mrs. Kilroy to see if it still agglutinates her own organism. We would like also to obtain the blood of the typhoid patients to test them with our paratyphoid organism, and we should like to have a sample of the well water at the institution in order to test it for the presence of the typhoid and paratyphoid bacilli.

Very respectfully,

WM. ROYAL STOKES, *Bacteriologist.*

This report materially complicates the situation. Sufficient investigations have not been made to determine the number and significance of paratyphoid carriers. Judging from the great similarity of the typhoid and colon groups, it seems probable that the paratyphoid organism may exist quite frequently in the intestines as a saphrophyte, like the colon bacillus, and, like it, relatively harmless. Its significance in this epidemic was not of practical importance because the infection was clearly typhoid fever both from the typical history and from the fact that later specimens of blood from the convalescents agglutinated typically.

The organism isolated from Mrs. Kilroy, however, must be regarded as a typhoid bacillus, although an atypical one. The isolation of this organism gives rise to several distinct possibilities: First—That all of the cases were food infections through the "carrier," and that the polluted well played no part in the outbreak. Second—That all of the cases were water infection, and that the well was polluted by the "carrier." Third—That the first case alone was infected by the carrier, and that subsequent cases arose from the first case through the medium of the polluted well. Fourth—That the first case was an accidental infection, in which the carrier played no part, and that all of the secondary cases were due to the pollution of the well from this sporadic case. If the first case was the cause of the infection of the later cases, the bacilli must have been left behind him in storage in order to account for the cases developing after August 17; and the only place where such "storage" could have occurred was the well. If all of the cases were due to food infection from the carrier, the well need not have necessarily played any part. Some of these questions can never be satisfactorily settled, at least with the evidence at hand.

In favor of food infection we have this point: The cook who prepared and handled food was a typhoid carrier.

In favor of a water infection we have the following points: First—No cases of typhoid fever arose until the end of July or middle of August, although the cook had been several months previously in the institution. Second—The well was found to be polluted, and there was a break or defect in the sewer pipe at a time when typhoid bacilli were certainly passing into the sewer. Third—Infection from carrier cases is variable, is not constant, and occurs at irregular intervals. Not only must there be extreme variations in the number and virulence of the bacilli excreted at different times, but the conditions favorable for infection of food only occur at intervals. On this account the carrier infections are characterized by the development of a group of cases within a short interval (a week or ten days), followed by a period of intermission in the epidemic, and later by another similar outbreak. No tendency to grouping was observed among these cases, and we must assume a constant and fairly uniform source of infection to account for the chronology of the epidemic, and no such source existed at the institution, excepting the water supply. Fourth—The infection ceased as soon as the drinking water was boiled.

For these reasons I am of the opinion that the outbreak was due to an infection of the well, and that food infection was not responsible for any but the first case, if for that.

The discovery of a carrier case within the institution was an interesting coincidence, which should not mislead us in the careful and unbiased consideration of the evidence.

More commonly than is supposed, so-called sporadic cases of typhoid fever are infected by carrier cases, and such cases may be followed by epidemics for which the carrier case is only indirectly responsible. The infection from an active case of typhoid fever probably exceeds many times in virulence, as a general rule, the infection from a carrier case.

V. Recommendations.

The means of protection for the water supply are plain, and should be carried on as heretofore. If boiling the water is ever discontinued, it should not be done for at least three months. The carrier case is a more difficult problem. The choice of cooking as an occupation is singularly unfortunate. Intestinal antisepsis should be tried. Hexamethylamine, benzoyl-acetyl-peroxide, or similar compounds, may be tried internally, but if, as seems probable, the infection is located in the gall-bladder, I consider ultimate success doubtful. Frequent re-examination of the intestinal discharges and rigorous care are recommended for the future. The attempt to isolate the typhoid bacillus from the well water in a large centrifugalized sample (one quart) was unsuccessful.

Marshall Langton Price, Secretary.

Official: C. W. G. Rohrer,
Medical Assistant.

AN OPINION UPON THE WASTE DISPOSAL PLANT OF THE SHARPLESS CREAMERY COMPANY, AT RISING SUN, CECIL COUNTY.

I am enclosing herewith an opinion upon the waste disposal plant of the Sharpless Creamery Company, at Rising Sun, Cecil county, which plant was investigated May 19, 1909, with Dr. H. Arthur Mitchell, Health Officer of Cecil county.

Situation of the Creamery Plant and Nature and Effects of the Waste.

The Sharpless Creamery Company's plant, at Rising Sun, is located near a small branch of Octoraro Creek, about four miles above the point of its discharge into Octoraro Creek. This small branch passes west from the railroad through a meadow upon which is located several farms and country houses in which the original complaint of nuisance originated.

The largest business of the Rising Sun Creamery plant is the manufacture of evaporated milk and cream. The latter is sold principally to retail dealers for making ice-cream.

The waste of the creamery arises from two main sources. First, waste from rinsing and washing the milk cans; second, waste from rinsing the evaporation tank.

The discharge of waste from the plant is thus variable and intermittent. The greatest discharge both in volume and organic materials probably occurs when the evaporation tank is cleaned, following the drawing off of the evaporated milk or cream. The evaporation tank has a capacity of several hundred gallons, and is emptied whenever the milk or cream which it contains reaches a satisfactory degree of concentration. This tank is heated by steam coils supplied from the boiler.

The waste thus consists of the organic materials washed from the milk cans or tank, diluted in varying degree with water and containing such foreign dirt as may be washed in from the floor.

This waste was originally discharged into the branch already referred to, without preliminary treatment through a pipe about a quarter of a mile long. The nuisance produced by this discharge was evidently considerable, judging from the character of its organic content and by the nature of the complaints lodged against it.

Disposal Plant and Disposal Process.

The disposal plant was installed by the Pure Water Company, of Philadelphia. The process consists in electrolysis of the wastes with subsequent sedimentation and filtration. All of the wastes from the plant are conducted through an iron pipe to the electrolyzer, through which they flow in a constant stream.

The electrolyzer is an iron case, containing three batteries of aluminum plates, with alternate positive and negative charge, between which the waste flows. A turbine wheel is placed between each pair of batteries, to thoroughly agitate the waste during treatment. The plant is actuated by an alternate current of about 2 volts, 2 amperes, from a dynamo belonging to the plant. Evidently the process is intended to depend upon the accumulation of small electrically charged particles, which can be removed by subsequent sedimentation, and filtration. It is alleged that chemical changes occur in the waste, but the merits of the process are probably coagulation and sedimentation, pure and simple. The electrolyzer is shown in Figure 1, which is a view looking down into the pit in which it is placed. From the electrolyzer the waste flows into a brick-and-cement tank, 8 feet wide by 12 feet long and 8 feet deep. This tank is divided into two parts by a three-foot wall of coarse charcoal, supported at the upper end by a wire screen, and at the lower end by a perforated wooden partition. The arrangement of the cement tank and electrolyzer is shown in Figure 2.

The charcoal filtration bed is shown in Figure 3. The purpose of the process is to retain the coarse coagula as a sediment in the bottom of the upper end of the tank, and to remove the remainder by filtration through the bed of charcoal. The nitrifying bacteria are concerned in a considerable part of the action of the charcoal bed.

Examination of the Disposal Plant and Stream.

This examination was made, as already stated, May 19, 1909, with Dr. Mitchell and Mr. Gibson, of the Pure Water Company.

The plant was examined in the afternoon, and thus there was an opportunity to inspect the plant in full operation, and also later, when the evaporation tank was washed out.

The amount of waste passing through the plant averages, it is stated, 10,000 to 15,000 gallons daily.

The disposal plant was inspected and the stream examined for about half a mile below the point of discharge of the waste effluent.

The effluent at the point of discharge was a grayish white liquid, with a slight sour odor and of a lukewarm temperature. Immediately below the effluent the bed and sides of the stream contained a thick gray scum somewhat softer in consistency than cream cheese. The vegetation for a distance below, along the bank and sides, was rank and luxuriant. About 20 different variations of algæ were observed in the stream passing downward. The bulk of those near the effluent were white or grayish. Chlorophal-bearing algæ were observed lower down of bright and dull green shades, and a number of a brilliant red hue. There was little odor observed in the stream, though it is to be remembered that the temperature was not high on the day of

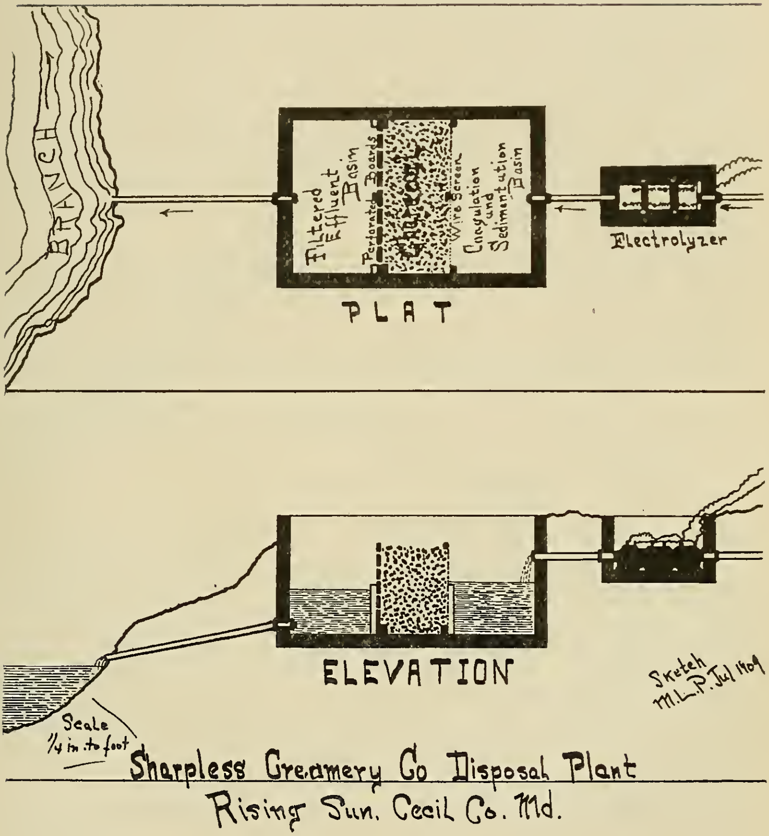

BRANCH
Filtered Effluent Basin
Perforated Boards
Charcoal
Wire Screen
Coagulation and Sedimentation Basin
Electrolyzer
PLAT
ELEVATION
Sketch M.L.P. Jul 1909
Scale 1/4 in. to foot
Sharpless Creamery Co Disposal Plant
Rising Sun, Cecil Co. Md.

FIGURE 2.

examination, and there had been a considerable amount of rain the previous week.

Three specimens were taken for analysis in the stream and three at the creamery. These are all indicated by numbers in Figure 4, and described more fully on the attached analysis sheet.

Miscroscopical examination of these samples was made by the bacteriologist, who reports as follows:

Washings from Evaporation Tank (diluted several times)—Masses of coagulated albumen, containing fat. Fat globules both in masses and free.

Upper Sedimentation Reservoir (after passing through electrolyzer)—Same appearance, but less free fat globules, and latter of small size. Large coagulated masses appear, which on examination show coagulated albumen and fat. These coarse coagula settle comparatively rapidly and leave supernatant liquor almost clear, with slight bluish white tinge.

Lower Sedimentation Reservoir (after passing through charcoal filter)—Bacteria and a few fine fat drops and masses of coagulated albumen.

Effluent at Point of Discharge into Stream—Many bacteria and very few fine fat drops and masses of coagulated albumen.

WM. ROYAL STOKES, Bacteriologist.

May 26, 1909.

BACTERIOLOGICAL ANALYSIS.

Sample No. 5, taken above the effluent discharge, showed 480 bacteria per c. c.; the colon bacillus was present in 10 c. c.

One-quarter of a mile below the effluent discharge the bacterial count was 300 per c. c., and the colon bacillus present by the presumptive test. Judging from these samples, the discharge of the present effluent does not cause any marked increase in the bacterial content. It is probable, however, that the bacterial content of the slime on the bed of the stream would run much higher. The original bacterial count of the waste is much lower than would naturally be expected (3,000).. (See Sample No. 1.)

The colon bacillus present in some of the remaining samples was probably either present in the milk or washed in from the floor of the dairy.

CHEMICAL ANALYSES.

The Chemist was instructed to examine for milk sugar, casein, lactalbumen and butter fat in all the samples. This he reports he was unable to do on account of the samples being insufficient in quantity. This report, therefore, only gives total solids, mineral solids, organic solids and oxygen consumed. For practical purposes the organic solids and oxygen consumed are the important data

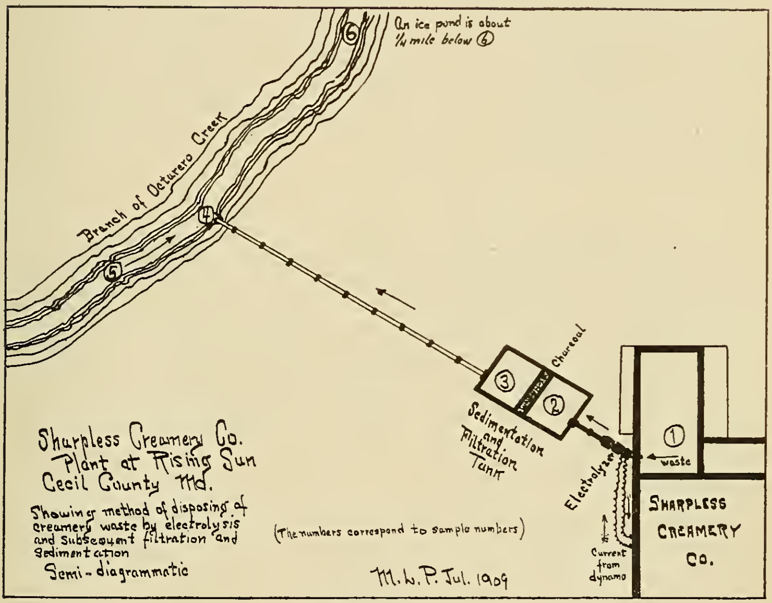

An ice pond is about
1/4 mile below ⑥
⑥
Branch of Octurero Creek
④
⑤
Charcoal
③
②
Sedimentation
and
Filtration
Tank
①
waste
Electrolyzer
Current
from
dynamo
SHARPLESS
CREAMERY
CO.
Sharpless Creamery Co.
Plant at Rising Sun
Cecil County Md.
Showing method of disposing of
creamery waste by electrolysis
and subsequent filtration and
sedimentation
Semi-diagrammatic
(The numbers correspond to sample numbers)
M. L. P. Jul. 1909

FIGURE 4.

of his analysis. Apparently there is little difference between the organic solids in the upper sedimentation basin and those in the lower basin after filtration. An actual increase will be noted in the organic solids from the sample taken at the effluent discharge. These differences, however, are probably in part due to varying amounts of waste discharged from the creamery.

To judge the final condition of the stream, it will no doubt be fairer to compare samples Nos. 5 and 6, the former of which represents the organic matter present in the stream before it receives the creamery effluent, and the latter the organic matter present in the stream one-quarter of a mile below where variations of the waste discharge are largely equalized by dilution. It appears from this comparison that the creamery waste increases the organic solids in solution from 26 parts to 60 parts, and the oxygen consumed from 5.1 parts to 8.2 parts.

This, of course, takes no account of the insoluble organic matters thrown out of solution as slime and which are doubtless responsible for a considerable part of the odor.

Recommendations.

It was observed at the time of inspection that the perforated board partition failed to properly hold the waste in the upper portion of the basin, owing to imperfect apposition with the bottom of the tank. This allowed the waste to pass through the charcoal and beneath the board without coming in contact with any considerable area of charcoal. I recommended on this account a brick partition, 12 inches high, at the bottom of the tank, in contact with the perforated board partition.

I also recommend cleaning the stream for 200 yards below the effluent.

It has been reported that since carrying these recommendations into effect the disposal plant has increased its efficiency considerably.

Conclusions.

Owing to the difficulty of obtaining a uniform effluent for examination, which difficulty has already been pointed out, conclusions cannot be drawn from the results of the chemical and bacteriological examinations of the specimens taken. On this account deductions must be made from the condition of the stream itself. While no reports have been received upon this point, no further complaints have been brought to my attention concerning the condition of the stream, and I should be led to infer that from a practical standpoint the disposal plant is giving satisfactory results.

Very truly yours,

Marshall Langton Price, M. D., Secretary.

WASTE DISPOSAL PLANT, SHARPLESS CREAMERY COMPANY, RISING SUN, CECIL COUNTY, MD.

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
	Washings from Evaporation Tank before Electralysis.	Waste from coagulation and sedimentation basin.	Waste from Filter of effluent basin.	Waste effluent at point of discharge into stream.	Stream just above the point of effluent discharge.	Stream one-quarter mile. below effluent.
BACTERIOLOGICAL ANALYSIS.						
Bacteria per c. c. Ærobic..	3000	1200	720	1500	480	300
Colon bacillus in 1 c. c.....	Absent.	Absent.	Absent.	Absent.	Absent.	Absent.
Colon bacillus in 10 c. c....	Present.	Present.	Absent.	Absent.	Present.	Absent, but presumptive test positive.
CHEMICAL ANALYSIS.						
Total solids................	520	234	290	408	90	110
Mineral solids.............	20	46	90	70	64	50
Organic solids.............	500	188	200	338	26	60
Oxygen consumed.........	82.5	41.6	52.4	47.5	5.1	8.2

Approved: August 3, 1909.
MARSHALL LANGTON PRICE, *Secretary.*

W. B. D. PENNIMAN, *Chemist.*
WM. R. STOKES. *Bacteriologist.*

INSPECTION OF BALTIMORE MANUAL LABOR SCHOOL.

Baltimore, October 13, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health, Baltimore, Md.

Dear Dr. Price: I have the honor to submit herewith my report upon an inspection of the Baltimore Manual Labor School, located at Arbutus, Baltimore county, Md., made pursuant to your instructions, September 29, 1909.

It was deemed wise to make this inspection because three small outbreaks of typhoid fever had occurred in the school within the limit of a year.

Population.

The total number of inhabitants at the Baltimore Manual Labor School comprises a list of 36 persons, as follows:

Twenty-eight (28) boys.
One (1) waitress.
One (1) laundress.
One (1) cook.
Superintendent.
One (1) teacher, male, training school.
One (1) teacher, female, grammar grade.
One (1) farmer.
One (1) assistant farmer.

Age of Boys.

The average age of the 28 boys resident at the Baltimore Manual Labor School ranges from 7 to 16 years. The number of boys at each age period is pretty well distributed.

Record of Outbreaks.

Down to date (September 29, 1909) three outbreaks of typhoid fever have occurred at the Baltimore Manual Labor School. These may be summarized as follows:

1. The first outbreak occurred in December, 1908, and consisted of 7 cases. It extended from December, 1908, into the month of March, 1909. The school authorities believed the outbreak was caused by drinking water from an infected branch which crosses the school grounds.

2. The second outbreak of typhoid fever at the Baltimore Manual Labor School began about the middle of July of the present year (1909) and continued until August 28, 1909. There was a total of 5 cases.

3. A third outbreak of typhoid fever, consisting of 3 cases of sickness, is now prevailing. Two of these 3 boys have been taken to the hospital for treatment.

SPORADIC CASES.

Two of the employees at the Baltimore Manual Labor School have also had typhoid fever in time past.

1. Geo. C. Petticord, gardener, had typhoid fever three years ago.

2. Mr. Barber, a laborer, also had typhoid fever several years ago. Until late in the spring of the present year (1909) Mr. Barber performed laboring work on the grounds of the Baltimore Manual Labor School.

CAUSES OF OUTBREAKS.

The reputed causes of these outbreaks of typhoid fever at the Baltimore Manual Labor School may thus be summarized:

1. The December (1908) outbreak, comprising 7 cases of sickness, is alleged to have been due to drinking branch water.

2. The July (1909) outbreak, consisting of 5 cases, has never been assigned to any definable cause.

3. The third outbreak, consisting of 3 cases and now in progress, is believed to have been brought to the school from Raspeburg, Baltimore county. One of the three typhoid patients, Charles Schweizer, visited at Raspeburg, and while there he drank water from an infected well. The other two boys who were taken ill at the same time as Charles Schweizer, or a little later, had not been visiting.

WATER SUPPLY.

The main source of water supply at the Baltimore Manual Labor School is an artesian well, located 25 feet from the house. This well is 500 feet deep, and is cased all the way from top to bottom with an 8-inch iron pipe. This well is covered, but not cemented. The old cover was replaced by a new one just one month ago.

By means of a gasoline engine the water is pumped into a tank over the well. There is a hydrant attached to the artesian well. From the tank over the well the water is piped into the kitchen.

ACCESSORY SUPPLIES.

There is a dug well on the place, but the water obtained from this well is known to be bad and has not been used for some time. Water is also obtained from a small branch which crosses the school grounds. Water from this branch is forced up into a tank in the building by means of a hydraulic ram. From this tank the water is piped into the laundry and into the bathroom in the home, and in the school.

ICE SUPPLY.

The ice used at the Baltimore Manual Labor School is gathered from a pond supplied by water from a large spring.

MILK SUPPLY.

The milk used at the school is produced on the place. The dairy, consisting of 10 cows, is very well kept.

The cows are milked by the boys. All of the boys use milk as a staple article of diet.

OTHER FOODS.

Ice-cream is very rarely used, except at Thanksgiving or some other festival or holiday occasion.

The bread used at the school is purchased at Schmidt's bakery, corner of Gilmor and Saratoga streets, Baltimore.

Fresh meats are obtained from Mr. Kaufman, Hollins Meat Market, Baltimore.

SEWAGE DISPOSAL.

There is a dug privy pit located 70 feet from the artesian well. There are also several closets located at different sections of the yard, surrounding the school.

SAMPLES COLLECTED.

Two samples of water and one of milk were collected at the Baltimore Manual Labor School. These three samples were analyzed both chemically and bacteriologically. The following is a list of these samples:

1. Artesian well.
2. Dug well near house.
3. Sample of milk.

ANALYSES OF WATER.

The bacteriological analyses of the two well waters and the water taken from the ice pond will next be given:

No. 1—Artesian well, Baltimore Manual Labor School, Arbutus, Balti more county. Date of collection, September 29, 1909. Date reported, October 13, 1909. Bacteria per cubic centimeter, 720. Colon bacillus, not found in 1 c. c. nor in 10 c. c. of water. For drinking, this water is suspicious, because presumptive test is positive.

No. 2—Dug well, Baltimore Manual Labor School, Arbutus, Baltimore county. Date of collection, September 29, 1909. Date reported, October 13, 1909. Bacteria per cubic centimeter, 480. Colon bacillus, present in 10 c. c. of water. For drinking, this water is bad.

The bacteriological analysis of a sample of water taken from the ice pond will next be given:

Water from ice pond, Baltimore Manual Labor School, Arbutus, Baltimore county. Date of collection, September 29, 1909. Date reported, October 13, 1909. Bacteria per cubic centimeter, 180. Colon bacillus, present in 10 c. c. of water. For drinking, this water is bad.

CHEMICAL ANALYSES OF WATER SAMPLES.

No. 1—Artesian well, Baltimore Manual Labor School, Arbutus, Baltimore county. Date of collection, September 29, 1909. Date reported, October 7, 1909. Total residue at 230° F., 168. Chlorine, 19.02. Nitrogen as free ammonia, 0.030. Nitrogen as albumenoid ammonia, 0.045. Nitrates, trace. Nitrites, none. For drinking, good.

No. 2—Dug well, Baltimore Manual Labor School, Arbutus, Baltimore county. Date of collection, September 29, 1909. Date reported, October 7, 1909. Total residue at 230° F., 92. Chlorine, 10.05. Nitrogen as free ammonia, 0.038. Nitrogen as albumenoid ammonia, trace. Nitrates, 6.05. Nitrites, none. For drinking, bad.

ANALYSIS OF MILK.

The bacteriological analysis of a sample of milk, Baltimore Manual Labor School, Arbutus, Baltimore county:

Date of collection, September 29, 1909. Date reported, October 13, 1909. Bacteria per cubic centimeter, 480,000. Lactose bile, 1/1000 c. c., unchanged. Colon bacillus, not found in 1/1000 c. c. of milk. For use, this milk is good.

Recommendations and Conclusions.

1. At the present time there are no typhoid fever cases on the premises of the Baltimore Manual Labor School. Of the three recent cases occurring among the twenty-eight boys in this school, one has practically recovered, and the other two are in the hospital.

2. All water but that derived from the artesian well at the Baltimore Manual Labor School should be discarded for drinking purposes. The water from the dug well has been pronounced bad; likewise that from the branch which flows through the premises.

3. Judging from histories of the first and second outbreaks of typhoid fever, namely, the outbreak in December, 1908, and July-August, 1909, outbreak, these cases resulted from drinking infected water on the premises. The third outbreak, the one engaging our attention at the present time, was probably an importation from Raspeburg.

4. The milk supply at the Baltimore Manual Labor School is good.

5. The ice supply, as the analysis of the water from the ice pond would indicate, is gathered from infected water. This fact bears but little weight in the present outbreak of typhoid fever at the Baltimore Manual Labor School, because stored ice eventually loses 99% of its bacteria.

Respectfully submitted,

C. W. G. ROHRER, M. D.,

Medical Assistant.

INSPECTION OF WEDDLE'S DAIRY.

BALTIMORE, October 21, 1909.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health, Baltimore, Md.

Dear Dr. Price: I have the honor to submit herewith my report on the inspection of Mr. Jacob Weddle's dairy, Violetville, Baltimore county, Md., made pursuant to your instructions of October 7, 1909.

REASON FOR INSPECTION.

The occurrence of a case of typhoid fever on the Weddle dairy was deemed to be a sufficient cause for an inspection.

The sick boy, Henry Norris, was employed in Baltimore city, and considerable doubt was entertained as to the origin of the disease on Mr. Weddle's place.

DESCRIPTION OF DAIRY.

Mr. Jacob Weddle's dairy is known as the Willow Grove Farm Dairy. Mr. Weddle's herd is a mixed one, composed of 14 cows of Alderney, Jersey and Durham breeds. These cows are valued at $50 a piece.

Mr. Jacob Weddle wholesales his milk to his son, Samuel P. Weddle, also of Violetville. From his 14 cows Mr. Jacob Weddle sells daily 28 or 30 gallons of milk.

Mr. Weddle's stable is in good condition. It is kept well whitewashed and well ventilated.

STATUS OF TYPHOID PATIENT.

The sick man (or boy, rather), Mr. Henry Norris, is about 16 years old. He had been ill for about three weeks in Mr. Weddle's house. From Mr. Weddle's house he was removed to St. Agnes' Hospital, where he remained for one week. The Norris boy was discharged from the hospital as cured on the Saturday preceding my visit—Saturday, October 2, 1909. He now makes his home at Mr. Lantz's, a relative and neighbor of Mr. Jacob Weddle.

The sick boy was employed in a wholesale dry goods house on Baltimore street, in the city of Baltimore.

DRINKING WATER SUPPLY.

On Mr. Jacob Weddle's place there is one well, 30 feet deep, which contains on an average 12 feet of water. The well is 25 feet from the house, and is protected from surface drainage.

The people living in four houses use the water from this well; a number of railroad men also use it. The following is a detailed list:

1. **Mr. Jacob Weddle, three in family.**
2. **Mr. Samuel P. Weddle, four in family.**
3. **Mr. Charles Taylor, son-in-law, four in family.**

4. Lieutenant Buckley, four in family. Lieutenant's house is now vacant. He lived there for one year, and then removed to Salisbury.
5. A group of railroad men, about 15 persons in all.

SEWAGE DISPOSAL.

Surface disposal of sewage, as is the usual disposition made of it in suburban places, is here in vogue. The outhouse, or toilet, consists of a privy pit, which is not impervious to water. It is located about 50 feet away from the well, and is cleaned annually.

WATER ANALYSIS.

One sample of water was collected and submitted to bacteriological analysis. The following is a copy of the report:

Well of Jacob Weddle, Violetville, Baltimore county. Sample submitted October 8, 1909. Report received October 19, 1909. Laboratory No., 536. Bacteria per cubic centimeter, 120. Presumptive test, lactose bile, 10 c. c., 60 per cent.; lactose bile, 1 c. c., 50 per cent.. Cultural properties: a. Lactose broth, 10 c. c., 30 per cent.; b. lactose broth, 1 c. c., 70 per cent.; c. litmus milk, 10 c. c., acid and coagulated; d. litmus milk, 1 c. c., acid and coagulated; e. gelatin, 10 c. c., not liquefied; f. gelatin, 1 c. c., not liquefied. Colon bacillus, present in 10 c. c. and in 1 c. c. of water. For drinking purposes, this water is bad.

Summary and Conclusions.

1. The case of typhoid fever occurring on Jacob Weddle's dairy farm originated in Baltimore city. This view is tenable when we consider the fact that no other case of typhoid fever occurred on the Weddle farm.

2. The patient, Henry Norris, being employed in the city, used Baltimore city water for drinking purposes. During summer and fall it is rarely or never safe to drink city water unless it has been boiled.

3. The colon bacillus was found in the water taken from Mr. Weddle's well. The colon bacillus is a frequent inhabitant of surface wells. It enters these by means of underground currents or by surface contamination, more frequently the latter.

4. The presence of the colon bacillus in a source of drinking water supply does not necessarily indicate that the typhoid bacillus is also present. It is highly suggestive, however, that such a condition of affairs might result.

5. It is recommended that better attention be paid to surface drainage and to keeping in better condition the family toilet.

6. As no other cases of typhoid fever have appeared at Mr. Weddle's, and as the sanitary conditions are fair, his dairy products can, therefore, be consumed without danger.

Respectfully submitted,

C. W. G. ROHRER, M. D.,
Medical Assistant.

INSPECTION (1909) OF HERRING RUN.

BALTIMORE, NOV. 16, 1909.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health of Maryland.

Sir: I have the honor to submit herewith a condensed report on the 1909 inspection of the Herring Run watershed, made pursuant to your instructions of October 11, 12 and 13. The inspection was made conjointly by Mr. Charles L. Gosnell, of the Baltimore County Water and Electrical Department, and myself. A preliminary inspection had been made in 1907, and a complete sanitary survey in 1908.

In the investigation of 1908 a grand total of 261 pollutions was noted, which can be summarized and tabulated as follows:

Bath-tub and kitchen drainage	166
Toilets	67
Cow-stable drainage	8
Manure heaps or pits	5
Surface water	4
Cesspools	3
Horse-stable drainage	2
Deposits of garbage and other refuse	2
Hogpens	2
Chicken-house	1
Barnyard drainage	1
Total	261

The work done in 1908 has been crowned with an unusual measure of success, and as a result of the 1909 inspection of Herring Run, I am compelled to chronicle but nine (9) sources of pollution:

1. George Bock, Highlandtown reservoir, toilet.
2. Charles Burke, Highlandtown reservoir, toilet.
3. Anthony Rice, Willow avenue, toilet.
4. Daniel W. Dwyer, owner, Lexington street; tenant, Miss Armiger, Grant and Arlington avenues.
5. Robert M. Taylor, Mt. Prospect Dairy, Towson, owner; tenant, Joshua Regester, Towson; situated about 50 yards from main stream emptying into Herring Run. Drainage, hogpens, cow stables (80 to 100 cows), and large manure pile empties into this tributary of Herring Run.
6. Dr. George Wegefarth's houses, Evergreen Lawn, Hamilton—38 houses and 1 stable. Kitchen and bath-tub drainage from these houses flows into Herring Run.
7. Mr. Van Reuth, Harford road, Hamilton, cesspool.
8. Geo. F. Reuckert, Harford road, Hamilton, cesspool.
9. Arlington avenue sewer, Ringgold's development. Twelve or more houses empty their bathroom and kitchen drainage into the sewer.

As will be noted in this report, the Herring Run watershed bids fair to become the cleanest in the State. From this source the people of Highlandtown and Canton derive their water supply.

Respectfully submitted,
C. W. G. ROHRER, M. D.,
Medical Assistant.

II—CASES EXAMINED FOR DIAGNOSIS.

DIPHTHERIA IN PERRYVILLE.

Perryville, Md., Jan. 8, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health of Maryland,
Baltimore, Md.

Sir: Under the above caption, I have the honor to submit to you the following report:

On Wednesday evening, January 6, 1909, you received a telephone message from Dr. L. G. Taylor, of Perryville, Cecil county, describing a case of infectious disease the diagnosis of which was in doubt. The patient was an adult female, white. The differential diagnosis apparently lay between naso-pharyngeal diphtheria and malignant scarlet fever of the anginose type. Quite recently two deaths from malignant scarlet fever in adults occurred in Perryville. One of the decedents was a white woman (Frances C. Boyd), 31 years old, who died October 27, 1908, after an illness of three days. The second death from malignant scarlet fever occurred December 26, 1908. This deceased person was a white man, aged 36 years, who had also been ill but three days. Upon the death of the latter you yourself were called to Perryville to investigate the situation.

Pursuant to your instructions, I took the train to Perryville at 1 P. M. on the 7th instant, reaching Perryville about 2.15 P. M. I was met at the station by Dr. L. G. Taylor, of Perryville, and Dr. Herbert L. Rich, of Port Deposit, both of whom accompanied me to the home of the patient.

Resume of Clinical History.

The ill person is Mrs. Eva Sanders, white, aged 22 years; address, Perryville, Cecil county, Md. The Sanders family consists of four members, viz.: Mrs. Sanders, her husband, and two children, aged, respectively, 2½ and 3½ years. Dr. L. G. Taylor, a well-known physician of Perryville, is the attending physician.

Dr. Taylor was called in to see Mrs. Sanders on the Sunday evening preceding (January 3, 1909), and had attended her all the week. The onset of the disease was marked by severe headache, pain in back of neck, sore throat and great prostration.

On Tuesday, January 5, Dr. Taylor injected 3,000 units of Mulford's antitoxin. Hitherto the patient's condition had been alarming. Shortly after the use of the antitoxin a noticeable improvement could be seen. A membrane which involved the right tonsil, the pharynx and the nose, began rapidly to disappear.

January 7, 1909: Patient's face is flushed and she is decidedly nervous and feverish. Temperature, 102.6°; pulse, 110 to 115. Her tongue is thickly coated and breath fetid. There is intense redness of the fauces, and a grayish white membrane is present upon both tonsils, the pillars of the fauces, on the mucous membrane of the pharynx and in the nose. The structures on the right side are the more affected at the present time. Both tonsils are enormously swollen. A portion of the diphtheretic membrane has become detached from the faucial pillars of the right side, leaving a large, ulcerated, bleeding surface exposed. (The detached, bloody membrane was retained by Dr. Taylor for my inspection.) The exudate of the tonsillar-crypts, five or six in number, is visible on the left side. The glands in the neck are swollen and painful. There is no skin eruption. Three cultures were taken, as follows: One from the ulcerated surface on the faucial pillars, right side; one from the exudate on the left tonsil, and one from the anterior nares.

Dr. Taylor stated that he would use 4,000 units more of antitoxin in the evening of my visit (January 7), and that he would also immunize the patient's husband and children, using 1,000 units for the husband, 300 units for the child aged 2½ years, and 500 units for the child aged 3½ years.

At the close of my conference with Drs. Perry and Rich, Dr. H. Arthur Mitchell appeared upon the scene. Dr. Mitchell is the County Health Officer, and he informed me that, as the affected family is in straitened circumstances, the county will meet the expense incurred by the use of antitoxin.

Respectfully submitted,
C. W. G. Rohrer,
Medical Assistant.

Addendum.

The three cultures alluded to above were negative for diphtheria bacilli. A culture taken by Dr. Taylor in the morning of the same day (January 7), as well as a culture taken by Dr. Taylor on the day preceding, was also negative, making a total of five negative cultures. On January 29, however, when the pseudo-membrane had almost disappeared, a sixth culture was taken by Dr. Taylor. This culture showed the presence of diphtheria bacilli, thus clinching the clinical diagnosis.

A CASE OF ERUPTIVE DISEASE.

Baltimore, July 1, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health of Maryland,
8 *and* 10 *South Street, Baltimore.*

Sir: I have the honor to report to you the findings in a case of eruptive disease occurring in the practice of Dr. Frank H. Ruhl, Health Officer for the Thirteenth district, Baltimore county.

In response to a telephone message from Dr. Ruhl on the morning of the 14th of June, you directed me to proceed to Farmer's Rest, Baltimore county. Here I found Dr. Ruhl awaiting me with a conveyance to take me to the home of his patient.

The patient was a white man, 37 years old; residence, Lansdowne, Baltimore county; married. The patient is in the employ of the Baltimore and Ohio Railroad.

Mr. H———, who has been subject to annual attacks of rhus poisoning for some years, had been ill four days. His symptoms were slight fever, headache, pain in the back, coated tongue and an eruption of large and small vesicles, occurring in groups. This eruption was characterized by intense itching. The eruption had a pretty general distribution. There were but few lesions, however, over the face and lower extremities. The eruption was most marked over the body, hands and arms, external genitals and feet. The palms of the hands and soles of the feet have been attacked, and likewise the buccal mucosa—certainly an unusual condition in dermatitis venenata, or rhus poisoning. Over the shoulders and arms the groups of vesicles were drying up. This took place without the formation of pus. Some of the earlier lesions were papular in form. Thus we have a mixed eruption—papules, vesicles and healing. A lotion of Grindelia robusta was given by Dr. Ruhl to allay the disagreeable itching.

As there was a faint suspicion of smallpox in Mr. H———'s case, it is well to add that he bears three good vaccination scars. Mr. H——— was vaccinated the last time about ten years ago.

Dr. Ruhl's diagnosis leans toward dermatitis venenata, or rhus poisoning, with which diagnosis I concur. The vesicular eruption over the palms of Mr. H———'s hands and the soles of his feet, and especially over the mucous membrane of the mouth, were the puzzling points. The last named condition had caused the patient to have an intense soreness of the throat, which interfered very materially with the act of deglutition.

Clinical Diagnosis.

An unusually severe and complicated case of dermatitis venenata, or rhus poisoning.

The following communication, dated June 18, was received from Dr. Rhul:

"In reply to yours of June 17, 1909, would state that the case of Mr. H——— at this time has not improved very much. He was very sick this morning, but a little better this evening. The entire mucous membrane of his mouth, lips, palate, gums and tonsils is covered with ulcerative and pus-secreting sores. He has slight fever, and is still covered with eruption of groups of small vesicles and intense itching.

"While I am confident it is nothing but Rhus poisoning, it is a different eruption from any I have seen before. Dr. Pentz, from B. and O. Relief Staff, was out to see him today (as he is employed by the B. and O. R. R.). Dr. Pentz said he never saw anything like it before."

In addition to seeing the above case of eruptive disease, I incidentally inspected the farms of Messrs. John Link, Halethorpe Postoffice, and George Doering, Lansdowne Postoffice. It was alleged that Messrs. Link and Doering have been using night soil for fertilizing growing vegetables.

Both Dr. Ruhl and Mr. Link informed me that not a farmer or planter in the Thirteenth district had been using night soil, except in accordance with the regulations issued by this Board, and my inspection convinced me of the authenticity of this statement.

Respectfully submitted,

C. W. G. Rohrer,
Medical Assistant.

EXAMINED FOR DIAGNOSIS—DISEASE SUSPECTED, *TYPHUS FEVER*.

EXAMINED BY DR. PRICE, JUNE 25, 1909.

Baltimore, July 3, 1909.

Patient, John Russell, white male, aged 50 years; admitted to Emergency Hospital, Easton, June 18, 1909, for typhoid fever; had been sick then four days. The history of the case is indefinite, but delirium was early in onset, and the case was severe from the start. Patient has not been out of Talbot county for some time. Definite history to this effect for past three weeks. Was engaged in farm work at time of onset in a neighborhood where typhoid fever has been prevalent. Eruption appeared about 3 P. M., June 20; became petechial June 22.

Clinical Examination.

The patient is a man of medium hight, with a well-built frame, but quite emaciated, especially in the limbs. It is said that emaciation has been rapid during his stay in the hospital. The patient is lying on his right side, with the legs flexed, in a stuporous, semi-comatose state. He replies to brief questions more or less rationally. The face is slightly congested, but not flushed. The conjunctivæ infected, the pupils normal in appearance, the deep reflex diminished. The skin is soft and bathed in a profuse sweat. The hearing is not impaired; the basis of the lungs clear. No signs or laryngeal involvement. The voice is comparatively clear. The liver extends a quarter of an inch below the costal margin; no tenderness on deep pressure. The tongue is swollen and coated, but not dry and fissured. Pulse of low tension and regular. No dicroticism noted. The range has been from 80 to 110 or 120. An abundant maculo-papular eruption is present on the dorsal and flexor surfaces of the arms and legs. Very scanty on the abdomen, more abundant on the back and buttocks.

The palms and soles are free. Color varies from dark red to purple. Distinctly petechial, only on dependent parts. No large ecchymosis.

Specimens Taken—For Widal test, for malarial parasite; urine in lactose bile; blood in lactose bile. Results all negative for malaria and typhoid.

Diagnosis—Reserved. Typhus fever practically excluded. Typhoid fever or acute miliary tuberculosis probable. Patient died June 28, 1909. Buried in formalized sheet. No autopsy.

III—QUARANTINE ORDERS AND REGULATIONS.

Office of the State Board of Health of Maryland,
No. 10 South Street, Baltimore.
March 25, 1909.

RULES AND REGULATIONS GOVERNING THE ESTABLISHMENT OF A QUARANTINE AT THE MARYLAND HOUSE OF CORRECTION AND FOR THE GOVERNMENT OF THE OFFICERS, EMPLOYEES, AND PRISONERS OF THE INSTITUTION.

Under the authority of the provisions of Section 29 of Article 43 of the Code of Public General Laws, the following rules and regulations governing the establishment of a quarantine at the Maryland House of Correction and for the government of the officers, employees and prisoners in the institution are hereby formulated:

1. An absolute quarantine of all prisoners confined in the Maryland House of Correction and of all prisoners whose terms expire during the two weeks succeeding the date of this order, is established.

2. All prisoners whose terms expire in the next two weeks will be held under observation until the end of the two weeks' period.

3. All officers and employees of the institution will be held under modified quarantine with sanitary surveillance. Such officers and employees, after vaccination, will be allowed to leave and return to the institution, providing a daily report is made to the jail physician.

4. The foreman of the jail shops will be held under the same modified quarantine under sanitary surveillance, as in the case of officers and employees.

5. All cases of smallpox now in the institution, and any that may develop in the future, will be removed to the pest-house.

6. Six special vaccine physicians are hereby appointed to assist the jail physician in vaccinating the inmates.

Marshall Langton Price,
Secretary State Board of Health of Maryland.

Approved:
(Seal.) Austin L. Crothers.

Office of the State Board of Health of Maryland,
No. 10 South Street, Baltimore,
April 5, 1909.

AMENDMENT TO QUARANTINE ORDER DATED MARCH 25, 1909, GOVERNING THE MARYLAND HOUSE OF CORRECTION.

Under the authority of the provisions of Section 29 of Article 43 of the Code of Public General Laws, the quarantine order dated March 25, 1909, entitled "Rules and Regulations Governing the Establishment of a Quarantine at the Maryland House of Correction and for the Government of the Officers, Employees and Prisoners of the Institution," is hereby amended, as follows:

1. Owing to the development of two (2) additional cases of smallpox among prisoners in the House of Correction, all shops are hereby ordered closed for a period of three (3) days from the date of this order until thoroughly cleaned and fumigated.
2. The shipment of manufactured articles from the House of Correction is forbidden until the same have been fumigated.
3. Prisoners who have been successfully vaccinated during the month of March, 1909, and whose terms have expired, will be discharged from the House of Correction on the 8th instant, after a bichloride bath and a change of clothing, in accordance with the provisions of the original quarantine order.
4. Prisoners whose terms have expired and who have not been successfully vaccinated during the month of March will be revaccinated as promptly as possible, and discharged after the expiration of six days following vaccination, after a bichloride bath and change of clothing.
5. The jail physician is directed to carry out so much of the provisions of this order as relates to bichloride baths and revaccination, and for the latter purpose the employment of such of the special vaccine physicians appointed March 29, 1909, as the jail physician may designate, is authorized.

In witness whereof I have hereunto put my hand and the seal of the State Board of Health, this 4th day of April, 1909.

(Seal.) Marshall Langton Price,
Secretary.

Office of the State Board of Health of Maryland,
No. 10 South Street, Baltimore,
April 7, 1909.

SECOND AMENDMENT TO QUARANTINE ORDER DATED MARCH 25, 1909.

Under the authority of the provisions of Section 29 of Article 43 of the Code of Public General Laws, the quarantine order applying to the Maryland House of Correction dated March 25, 1909, and amended April 5, 1909, is hereby amended, said amendment to apply only to Section 4 of the amendment cited, which is amended to read as follows:

4. Prisoners whose terms have expired and who have not been successfully vaccinated during the month of March will be revaccinated as promptly as possible, and held under observation at the House of Correction for a period of two weeks from the date of this order. At the expiration of this period such prisoners will be discharged, if well, after a bichloride bath and a change of clothing.

In witness whereof I have hereunto put my hand and the seal of the State Board of Health, this 7th day of April, 1909.

Marshall Langton Price,
Secretary.

Office of the State Board of Health of Maryland,
No. 10 South Street, Baltimore,
April 15, 1909.

THIRD AMENDMENT TO QUARANTINE ORDER DATED MARCH 25, 1909.

By virtue of an order passed by the State Board of Health at its regular monthly meeting, April 14, 1909, the quarantine order dated March 25, applying to the Maryland House of Correction, and amended April 5 and April 7, 1909, is hereby further amended, such amendment to apply only to Section 4, which is amended to read as follows:

4. Prisoners whose terms have expired and who have not been successfully vaccinated during the month of March will be revaccinated as promptly as possible, and held under observation at the House of Correction for a period of three weeks from the date of this order. (Such order will take effect April 7 and expire April 28, 1909.) At the expiration of this period such prisoners will be discharged, if well, after a bichloride bath and a change of clothing.

In witness whereof I have hereunto put my hand and the seal of the State Board of Health this 7th day of April, 1909.

Marshall Langton Price,
Secretary.

Office of the State Board of Health of Maryland,
No. 10 South Street, Baltimore,
April 7, 1909.

Dr. J. J. Murphy, of Annapolis, is hereby appointed Special Inspector of the State Board of Health and Special Vaccine Physician to the Maryland House of Correction, to serve from April 4 to May 4, 1909.

Marshall Langton Price,
Secretary.

IV—MISCELLANEOUS.

ILLEGAL INTERMENTS—ANNE ARUNDEL COUNTY.

BALTIMORE, January 11, 1909.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health of Maryland,
Baltimore, Md.

Sir: I have the honor to make the following report: A letter dated January 5, 1909, over the signature of L. H. E. Haslup, subregistrar of births and deaths, Annapolis Junction, contained the following information:

> Armstrong-Denny Company, funeral directors, 715 and 717 Light street, Baltimore, removed and buried two bodies—one on the 3d of November, 1908, and the other on the 27th of November, 1908—without the usual permits as required by law. On the 21st of December, 1908, the Armstrong-Denny Company sent to Mr. Haslup the death certificates, requesting him to issue burial permits and send them by post. This Mr. Haslup refused to do. He notified the Armstrong-Denny Company that he would report the matter to the State Board of Health.

The names of the two deceased persons were Sarah B. Griffith and Edna I. Griffith, both of whom died at Severn, Anne Arundel county. Both were white persons, attended by Dr. R. A. Hammond, of Jessups. The former died of interstitial nephritis, at the age of 44 years; the latter died of inanition, at the age of 3 months.

Pursuant to your instructions, warrants for the apprehension of the Armstrong-Denny Co. were taken out this morning (January 11, 1909) before Magistrate L. H. E. Haslup. Being both magistrate and subregistrar, Mr. Haslup cannot sit in this trial. Mr. Haslup himself is the principal witness against the Armstrong-Denny Company.

The death of Sarah B. Griffith occurred November 27, 1908; the death of Edna I. Griffith, November 3, 1908.

Respectfully submitted,
C. W. G. ROHRER,
Medical Assistant.

Appendix—The Armstrong-Denny Co. was given a hearing.

CONDEMNATION OF SPOILED BEEF ON STEAMSHIP RAN.

BALTIMORE, March 29, 1909.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health of Maryland,
10 *South Street, Baltimore.*

Sir: I have the honor to report upon an inspection of some spoiled beef removed from aboard the steamship "Ran" at Sparrows Point, made pursuant to your instructions. On the morning of the 24th of March information from the Baltimore City Health Department was received at this office to the effect that "the Steamship 'Ran' was said to be at Sparrows Point with a consignment of spoiled beef on board." Upon calling up the United States Custom House, the Custom House officials informed us that the ship "Ran" was still in the Sparrows Point harbor, discharging a cargo of iron ore at the ore pier.

You transmitted to me the following order, over your own signature, under seal of the State Board of Health of Maryland:

> **"Dr. C. W. C. Rohrer, Medical Assistant of the State Board of Health, is hereby directed to proceed to S. S. Ran and destroy any spoiled beef which may be aboard."**

The ship "Ran," displaying the Norwegian colors, plies between Sparrows Point, Md., Norfolk, Va., Panama, and Daiquiri, Cuba. It is under the command of Capt. Cole B. Jensen and Lawrence Angell, second mate. It was with the latter that I held a conference, the captain being on a visit to the city at the time of my arrival. The ship was scheduled to leave for Norfolk at 2 P. M. on the day of my inspection, namely, March 24, 1909.

The spoilt beef in question was purchased on a previous trip—February 16, 1909—from the Sparrows Point Store Company. On February 17 the ship "Ran" sailed for Norfolk, where it loaded a cargo of coal and took same to Colon, Panama. Having discharged its cargo of coal, the "Ran" embarked for Daiquiri, in the Province of Santiago de Cuba. At Daiquiri the "Ran" received a consignment of iron ore, which it carried to Sparrows Point, this State.

The spoiled beef, a 200-pound barrel, had been returned to the Sparrows Point Store Company the day preceding my visit—that is, March 23, 1909. Accompanied by Mr. Joseph H. Tomlinson, Jr., I inspected and condemned this 200-pound barrel of beef, and poured over it one quart of kerosene oil. The spoilt beef, originally purchased from Thomas Bradley, Philadelphia, Pa., bore the stamp of the United States Government inspectors. Mr. Harry C. Buppert, manager of the Sparrows Point Store Company, informed me that the condemned beef would be shipped back to its point of origin.

Respectfully submitted,
C. W. G. Rohrer,
Medical Assistant.

VIOLATION OF VACCINATION LAW IN WASHINGTON COUNTY.

Baltimore, April 17, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health of Maryland,
10 *South Street, Baltimore, Md.*

Sir: I have the honor to report upon measures taken to secure stricter compliance with the Vaccination law on the part of public school teachers, pursuant to your instructions, April 16, 1909. First of all, I shall here give in full the excerpt, Section 46, Article 43, Code of Public General Laws of Maryland, treating upon this all-important subject.:

> "No teacher in any of the public schools of this State shall receive into such school as a pupil any person who has not been successfully vaccinated; and it shall be the duty of all teachers in the public schools, within ten days after the beginning of each fall term of said school, and thereafter as new pupils shall enter such school, to ascertain and enroll on the vaccine register of said school the names of those pupils who may produce certificates of a regular practicing physician of the county or city, as the case may be, certifying that the pupil has been successfully vaccinated and also the names of those pupils who have been enrolled at any previous term in any school of the county, or in the City of Baltimore, as the case may be, as successfully vaccinated pupils, whenever any such pupils shall present a certificate of such enrollment from the teacher of any such school. If any person shall apply for admission as a pupil in any of the public schools of this State, who has not been successfully vaccinated, the teacher shall give the parents, or guardian or other person having control of such pupil an order directed to any physician in the county or city, as the case may be, and requiring any regular physician to whom it may be presented, to vaccinate such pupil and return a certificate of such vaccination, when successful to the teacher giving such order. The County Commissioners of the several counties and the Mayor and City Council of Baltimore City, as the case may be, shall pay, or cause to be paid to the physician performing the services on such orders, the sum of fifty cents for every successful vaccination on the presentation of the order and certification of the teacher that such vaccination has been performed; provided, that in the counties, or in the City of Baltimore where vaccine physicians are appointed, or contracts made, with certain physicians by the proper authorities for the vaccination of all children or persons who may apply free of charge to the person applying, the provisions of this section providing for the payment of physician certified orders of teachers shall not apply. Any teacher neglecting or refusing to comply with the provisions of this section shall, on conviction thereof, before any Justice of the Peace having jurisdiction over said offense, be fined ten dollars for each and every offense; and no public school trustee, or commissioner shall grant any permit to any person who has not been successfully vaccinated, to enter as a pupil any public school, under the same penalty."

Through the .untiring efforts of Dr. J. E. Pitsnogle, the efficient Health Officer of Washington county, complete data has beeen obtained and charges preferred against two public school teachers, to wit: Mr. Barry Sheiss, Ringgold, teacher of public school No. 14, District No. 1, and Mr. Byron E. Staley, Breathedsville, teacher of public school No. 2, District No. 12. There are five charges against Mr. Sheiss and two against Mr. Staley. The former five are: Elva Marker, Mary Marker, Alice Fritz, Harry Oller and Daniel Hoffman. The latter two are: Lena Stockslager and Mary Stockslager.

Elva Marker, Mary Marker, Alice Fritz and Daniel Hoffman were received by Mr. Sheiss into his school September 21, 1908; Daniel Hoffman was received into Mr. Sheiss' school October 19, 1908. Lena Stockslager and Mary Stockslager were received into Mr. Staley's school September 7, 1908.

Acting upon the advice of State's Attorney Armstrong, I took out but two warrants, one each for Messrs. Sheiss and Staley, holding in reserve the remaining five. These warrants were taken out before Justice Hartle, Hagerstown, Friday, April 16. A preliminary hearing was set for Tuesday evening, 20th instant, at 8 P. M.

Thanks are due Dr. J. E. Pitsnogle, Health Officer, for valuable assistance rendered and for much important information supplied.

The prosecuting officers were reminded of the vast importance of these cases, and of the hearing which they will have upon the successful enforcement of the Vaccination law in the future. A few miles across the line in Pennsylvania—in Chambersburg, in Greencastle and in Waynesboro—opposition to the compulsory vaccination law has been waged even more strongly.

Respectfully submitted,
C. W. G. Rohrer,
Medical Assistant.

Addenda.

Dr. Pitsnogle requested me to say that he is waiting to hear from you in reference to three things:

(1) The advisability of serving a written notice upon the owners of slaughter-houses which are not kept in compliance with the laws on the subject. This notice should name a specified time in which to renovate their places.

(2) The ruling of the State Board of Health in regard to the tenure of office of County Health Officers.

(3 In reference to an improved card for reporting infectious diseases, Dr. Pitsnogle believes space should be provided for the patient's name, and that the cards should be of an approved size.

BIOLOGICAL REPORT ON SPECIMENS FROM BREWERY WASTE.

Baltimore, July 19, 1909.

Dr. Marshall Langton Price,
Secretary State Board of Health of Maryland,
Nos. 8 *and* 10 *South Street, Baltimore.*

Dear Sir: I have the honor to submit herewith a brief report upon the biology and economic importance of several organisms obtained from the sewage waste emanating from Brehm's brewery and brought to this office on the 12th instant by Mr. Martin J. Wiest, of 4215 York road, city.

The specimens submitted are "rat-tailed maggots," varying in age and size. They are larvæ of the so-called syrphus flies. The word *syrphus* is of Greek origin, meaning "a kind of winged insect."

The syrphus flies comprise a very large family, and more than three hundred species are known to occur in the United States. Their larvæ possess variable habits, and consequently present considerable variation in structure. Some feed in the decaying wood of old trees or logs; they may live in manure or soft mud impregnated with decaying vegetable matter; they may be found in the sap of trees or in the stems of certain tender plants or in fungi. Still others (genus *Microdon*) are common in ants' nests, and others again (genus *Volucella*) are guests in the nests of bumblebees.

But the most famous of all the syrphus flies is the one which commonly goes by the name of the drone fly. It is *Eristalis tenax,* and its larvæ is one of the rat-tailed maggots, the type submitted for investigation.

Habitat. Eristalis tenax, or the drone fly, is a cosmopolitan species, and is rather larger than the honey bee, which it closely resembles. It frequents flowers and is commonly found in houses on windows late in the autumn.

Breeding Places—The larvæ of the drone fly are found in soft mud and in privies, where they feed upon decaying animal and vegetable matter transforming to pupa within the last larval skin.

Morphology—When full grown the larvæ of the drone fly measures five-eighths of an inch in length and nearly three-sixteenths of an inch in diameter. Its "tail" is three-eighths of an inch in length.

These larvæ possess a tough, elastic, apparently chitinous envelope, and are difficult to crush. The so-called "tail" is a long, slender projection at the end of the body, bearing spiracles or breathing holes at the tip, so that when the body of the larvæ is buried in the semi-liquid mass in which it is feeding this long tail protrudes to the air, enabling it to breathe in comfort.

Folklore Concerning Eristalis Tenax, or the Drone Fly—Osten Sacken, in two interesting papers on the so-called "Bugonia myth," shows that this idea, which has been prevalent since ancient times and which is that the carcasses of animals may generate swarms of honey bees, has probably arisen from the fact that this drone fly, breeding in carcasses, has almost universally been mistaken for the honey bee. The learned Russian author shows the existence of this myth with many nations, including the Chinese and Japanese. It is mentioned in many places in ancient literature, and even occurs in the story of Samson, in the book of Judges, in the Old Testament. Here it inspired the famous riddle propounded by Samson: "Out of the eater came forth meat, and out of the strong came forth sweetness."

Economic Status of the Drone Fly—The drone flies are among the most interesting of dipterous insects. Their larvæ, called "rat-tailed maggots," are very curious objects, which are frequently sent to entomologists for name.

The syrphus, or drone flies, are flower flies *par excellence.* The fact, however, that these flies sometimes take possssion of the carcasses of animals renders their presence obnoxious and an element of danger. Hence they should be exterminated, along with the other species of flies. Breeding chiefly in filth, the finding of their larvæ would be indicative of bad hygienic surroundings.

Concluding Remarks in Reference to the Agency of Flies in the Spread of Disease—About forty thousand species of diptera, or true flies, that is, those insects which have but two wings, are known, and it is estimated that the number yet to be described will bring this number fully up to three hundred and fifty thousand. The possibilities for enormous multiplication are apparently greater in this order than in any other group of insects. It is estimated that the progeny of a single house fly, if undisturbed, would in the course of a single summer reach high into the billions in number. (An almost equally rapid multiplication takes place with some of the mosquitoes.)

The following instructive paragraph is taken from Dr. Howard's masterly treatise "The Insect Book":

> "As early as 1864, Leidy attributed the spread of gangrene in hospitals during the Civil War to the agency of the house-fly, and the terrible disease known as malignant pustule was afterward discovered to be caused by the bite of one of the gad-flies which carried the bacillus of anthrax from diseased cattle, and by its bite inserted it into the circulatory system of human beings. The carriage of the purulent ophthalmia of the Egyptians by the house-fly was later demonstrated, and the spread of the disease known as 'pink-eye' in the South has been shown by Hubbard to be facilitated by little midges of the genus Hippelates. An English army surgeon has ascertained that the tsetse-fly of Africa carries pathogenic germs from diseased cattle, and by its bite transfers them to the blood of healthy cattle, and late investigations have shown that certain flies, and especially the common house-fly, are responsible not only for the spread of Asiatic cholera, but of the everywhere prevalent and dreaded disease known as typhoid fever. A vital stimulus to this line of investigation has been given by the discovery that certain mosquitoes are responsible for the spread of malarial fevers, and a very great interest has been excited and an enormous literature has sprung up within the last few years concerning this line of investigation. This interest has become even more intensified by the experimental proof obtained by the United States Army Yellow Fever Commission of the agency of certain mosquitoes in the spread of yellow fever. The whole subject of the agency of insects in the transmission of disease is one of the most prominent subjects of medical investigation at the present time, and nearly all of the insects concerned in this work belong to this order Diptera; so that, in spite of the benefits to humanity which the parasitic species bring by their destruction of injurious insects and in spite of the beneficial function which many Diptera exercise as scavengers, this incident of the lives of many of them, added to the ravages of many more on crops and domestic animals, makes the order a distinctly and markedly injurious one."

REFERENCES.

(1) Gross, Samuel D., A System of Surgery, Vol. I, 1882.
(2) Howard, Leland O., The Insect Book, 1901.
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(4) Packard, Alpheus D., Guide to the Study of Insects, 1889.
(5) Sacken, C. R. Osten, Catalogue of the Described Diptera of North America, 1878.
(6) Smith, John B., Economic Entomology, 1908.
(7) Williston, S. W., Manual of North America Diptera, 1896.

Respectfully submitted,

C. W. G. Rohrer,
Medical Assistant.

REPORT OF THE BACTERIOLOGIST

Dr. Marshall L. Price,

Secretary State Department of Health.

Dear Sir: I hereby respectfully report upon the work performed in the bacteriological laboratory during the year 1909.

Table No. 1 shows that the number of examinations made for physicians for the detection of the various communicable diseases amounted to 3,036 during this year. During the year 1908 we made 2,993 similar examinations, so that this shows an increase of 43 over the previous year. We made 1,265 for typhoid fever, 246 for malaria, 1,147 for tuberculosis and 378 for diphtheria. The total number of positive and negative examinations is set forth in the table.

This table also shows that 630 examinations of drinking water were made and 75 examinations of milk, and the results in detail are set forth in tables Nos. 2 and 3. Table No. 2 shows that 161 specimens of drinking water throughout the State were good and 469 were either bad or suspicious. This shows that 469 are practically unsafe for drinking purposes, and, although it does not always indicate that this particular water will produce typhoid, yet it indicates that the route for intestinal infection is always open, and that the water is unfit for drinking purposes. This table also shows that 73 of the drinking wells were good and 242 bad or suspicious, and that 26 springs were good and 68 bad or suspicious. This shows that a large number of local and isolated water supplies throughout the State are polluted, and emphasizes the importance of circulars of instruction to health officers, medical men and citizens in general, in order to avoid water-borne typhoid fever, dysentery, paratyphoid infection and other intestinal diseases.

Table No. 3 shows that out of 75 examinations of milk 23 were good and 52 bad or suspicious. The condemnation of milk is based upon the fact that the specimen contains over 500,000 bacteria per cubic centimeter, and the colon bacillus in 1/1000 of a cubic centimeter. Such a result indicates improper refrigeration and dirty handling on the dairy farm. The milk is also condemned if there are over 25 pus cells per immersion field, together with a large number of streptococci. Such a result shows that there are one or more cases of garget or inflammation of the udder on the dairy farm, and that such milk containing virulent streptococci or other pus organisms may produce serious inflammatory conditions of the intestines, especially in infants or young children.

TABLE NO. 1.

EXAMINATIONS FOR PHYSICIANS FOR THE DETECTION OF DISEASE AND UNSANITARY CONDITIONS.

	Positive.	Negative.	Suspicious.	Unsatisfactory.	Total.
Typhoid Fever	468	659	121	17	1,265
Malaria	4	179	7	56	246
Tuberculosis	402	715	1	29	1,147
Diphtheria	114	264	..	..	378
Examinations of water..					630
Examinations of milk..					75
Total number of examinations made.........................					3,741

TABLE NO. 2—TABULAR REPORT OF WATER EXAMINATIONS, Jan. 1 to Dec. 31, 1909.

*Too many bacteria. †Presumptive test positive for colon. ‡Intestinal bacteria.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus, 10 c. c.	Colon Bacillus, 1 c. c.	Quality of Water.
1	Spigot, kitchen, Mrs. Stondemuier, Dr. H. A. Naylor, Pikesville	Jan. 5	1,200	Absent	Absent	Suspicious *
2	Pump, Mrs. Stondemuier, Dr. H. A. Naylor, Pikesville	Jan. 5	5,000	Present	Present	Bad
3	Spigot, Mrs. Stondemuier, Dr. H. A. Naylor, Pikesville	Jan. 5	1,320	Absent	Absent	Suspicious †
4	F. F. Greenwell, Leonardtown	Jan. 9	Liquefied	Absent	......	Suspiciuos
5	Spring, Fred Oldham, Timonium	Jan. 9	36	Absent	......	Good
6	Artesian well, Fred Oldham, Timonium	Jan. 9	162	Absent	......	Good
7	Well, Mrs. Harold Walsh, Dr. J. F. H. Gorsuch, Fork. No. 1	Jan. 9	1,080	Present	......	Bad
8	Well, Mrs. Harold Walsh, Dr. J. F. H. Gorsuch, Fork. No. 2	Jan. 9	960	Present	......	Bad
9	Well, Mrs. Guyton, Dr. J. F. H. Gorsuch, Fork. No. 3	Jan. 9	900	Present	......	Bad
10	Well, Mrs. Guyton, Dr. J. F. H. Gorsuch, Fork. No. 4	Jan. 9	720	Absent	......	Suspiciuos
11	Spigot, kitchen, Tome Institute, Dr. H. L. Rich, Port Deposit	Jan. 11	30	Absent	......	Suspiciuos
12	Spigot, Memorial Hall, Tome Institute, Dr. H. L. Rich, Port Deposit	Jan. 11	1,800	Present	......	Bad
13	Spigot, Washington Hall, Tome Institute, Dr. H. L. Rich, Port Deposit.	Jan. 11	480	Present	......	Bad
14	Spigot, soda fountain, Carson's drug store, Dr. H. L. Rich, Port Deposit	Jan. 11	Liquefied	Absent	......	Good
15	Spigot, Carson's drug store, carbonated water, Dr. H. L. Rich, Port Deposit	Jan. 11	10	Absent	......	Good
16	Spigot, Carson's drug store, water supply, D. H. L. Rich, Port Deposit.	Jan. 11	96	Absent	......	Good
17	Spigot, Junior Building, Tome Institute, water supply, Dr. H. L. Rich, Port Deposit	Jan. 11	300	Present	......	Bad
18	Well, T. P. Rose, Woodlawn Station	Jan. 11	960	Present	......	Bad
19	No. 1, Boys' Manual Training School, for ram, Dr. M. L. Price, State Board of Health	Jan. 15	420	Present	Present	Bad
20	No. 2, Boys' Manual Training School, below Lurman's ditch at junction of two streams	Jan. 15	600	Present	Present	Bad
21	No. 3, Boys' Manual Training School, laundry, Dr. M. L. Price, State Board of Health	Jan. 15	60	Present	Present	Bad
22	No. 4, Boys' Manual Training School, boys' dining-room, Dr. M. L. Price,	Jan. 15	300	Present	Present	Bad
23	No. 5, Boys' Manual Training School, above ram supply, Dr. M. L. Price	Jan. 15	720	Present	Present	Bad
24	No. 6, Boys' Manual Training School, kitchen, artesian, Dr. M. L. Price	Jan. 15	600	Absent	Absent	Good
25	No. 7, Boys' Manual Training School, tank in building, ram supply, Dr. M. L. Price	Jan. 15	250	Present	Present	Bad
26	No. 8, Boys' Manual Training School, bath room, ram supply, Dr. M. L. Price	Jan. 15	480	Present	Absent	Suspiciuos
27	No. 9, Boys' Manual Training School, below ram supply, Dr. M. L. Price	Jan. 15	720	Present	Present	Bad

28	No. 10, Boys' Manual Training School, ice pond, Dr. M. L. Price	Jan.	15	130	Absent	Absent	Good
29	Dr. Greenwell, Leonardtown	Jan.	29	Liquefied	Absent	......	Good
30	Pump, Emma McCullough, Parkton, A. M. Quick, Water Engineer, No. 147	Jan.	29	500	Absent	Absent	Good
31	No. 1, spring on farm near Hagerstown, J. Forney Toung, No. 82 Gunther Building, Baltimore	Jan.	29	Liquefied	Absent	Absent	Suspicious †
32	No. 2, spring on farm near Hagerstown, J. Forney Young, No. 82 Gunther Building, Baltimore	Jan.	29	Liquefied	Absent	Absent	Good
33	No. 1, walled up spring, Dr. W. C. Stone, Ellicott City	Feb.	7	360	Absent	Absent	Good
34	No. 2, open spring, Dr. W. C. Stone, Ellicott City	Feb.	7	180	Present	......	Bad
35	No. 3, covered spring, Dr. W. C. Stone, Ellicott City	Feb.	7	180	Absent	Absent	Good
36	No. 4, covered spring, Dr. W. C. Stone, Ellicott City	Feb.	7	500	Present	......	Suspicious †
37	Well, Mrs. Harold Walsh, Upper Falls, Dr. Gorsuch	Feb.	8	Liquefied	Present	Present	Bad
38	Well, Mrs. Harold Walsh, Upper Falls, Dr. Gorsuch	Feb.	8	Liquefied	Present	Present	Bad
39	No. 1, well, J. J. Cassidy, Forest Glen	Feb.	10	600	Absent	Absent	Good
40	No. 2, well, J. J. Cassidy, Forest Glen	Feb.	10	300	Absent	Absent	Good
41	No. 3, branch, J. J. Cassidy, Forest Glen	Feb.	10	600	Present	Present	Bad
42	Well, E. T. Heefenstein, St. John's Rectory, Dr. T. B. Owens, Ellicott City	Feb.	13	150	Present	Present	Bad
43	No. 1, spigot in kitchen, Tome Institute, Dr. H. L. Rich, Port Deposit	Feb.	17	No count	Absent	Absent	Good
44	No. 2, spigot, Jackson Hall, Tome Institute, Dr. H. L. Rich, Port Deposit	Feb.	17	No count	Absent	Absent	Suspicious †
45	No. 3, spigot, Memorial Hall, Tome Institute, Dr. H. L. Rich, Port Deposit	Feb.	17	No count	Absent	Absent	Suspicious †
46	No. 4, spigot, Washington Hall, Tome Institute, Dr. H. L. Rich, Port Deposit	Feb.	17	No count	Present	......	Bad
47	No. 5, spigot, soda fountain, Carson's drug store, Dr. H. L. Rich, Port Deposit	Feb.	17	No count	Absent	Absent	Good
48	No. 6, carbonated water, Carson's drug store, Dr. H. L. Rich. Port Deposit	Feb.	17	No count	Absent	Absent	Good
49	No. 7, spigot, Junior Building, Tome Institute, Dr. H. L. Rich, Port Deposit	Feb.	17	No count	Absent	Absent	Suspicious †
50	No. 1, pump, Rev. W. C. Shears, J. E. Sansbury, Forestville	Feb.	18	2,400	Present	......	Bad
51	No. 2, pump, Mr. Windsor, J. E. Sansbury, Forestville	Feb.	18	1,800	Present	Present	Bad
52	No. 3, pump, G. S. Dove, J. E. Sansbury, Forestville	Feb.	18	3,600	Absent	Absent	Suspicious *
53	No. 4, well, J. E. Sansbury, Forestville	Feb.	18	900	Present	......	Bad
54	No. 5, well, F. Shears, J. E. Sansbury, Forestville	Feb.	18	60	Absent	......	Good
55	Reservoir from spring, J. H. Cromwell, Timonium	Feb.	19	30	Present	......	Bad
56	Pump, John E. Burnham, Ruxton, A. M. Quick, Water Engineer, No. 148	Feb.	19	18	Absent	Absent	Suspicious †
57	Spring, Elisha Parks, Timonium, A. M. Quick, Water Engineer, No. 149	Feb.	19	156	Present	......	Bad
58	Spigot, Elisha Parks, Timonium, A. M. Quick, Water Engineer, No. 150	Feb.	19	30	Absent	Absent	Good
59	Well, Joshua Levering, 202 Stuart Building	Feb.	20	900	Absent	Absent	Good
60	Spring, Joshua Levering, 202 Stuart Building	Feb.	20	36	Absent	Absent	Good
61	No. 1, Dr. H. M. Kemp, Bloomington, Md	Feb.	27	Liquefied	Present	Present	Bad
62	No. 2, Dr. H. M. Kemp, Bloomington, Md	Feb.	27	Liquefied	Present	Present	Bad
63	No. 3, Dr. H. M. Kemp, Bloomington, Md	Feb.	27	900	Absent	Absent	Good

TABLE NO. 2—CONTINUED.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus, 10 c. c.	1 c. c.	Quality of Water.
64	No. 4, Dr. H. M. Kemp, Bloomington, Md.	Feb. 27	720	Absent	Absent	Good
65	No. 5, Dr. H. M. Kemp, Bloomington, Md.	Feb. 27	1,800	Absent	Absent	Suspicious †
66	No. 6, Dr. H. M. Kemp, Bloomington, Md.	Feb. 27	Liquefied	Present	......	Bad
67	No. 7, Dr. H. M. Kemp, Bloomington, Md.	Feb. 27	Liquefied	Absent	Absent	Good
68	Well at Arcadia, Upper Falls, Dr. W. B. Platt, 802 Cathedral street.	Mar. 1	1,800	Absent	Absent	Suspicious †
69	Spring at Arcadia, Upper Falls, Dr. W. B. Platt, 802 Cathedral street.	Mar. 1	15	Absent	Absent	Suspicious †
70	Takoma spring, Takoma Park, Washington, D. C., H. E. Rogers	Mar. 10	42	Absent	Absent	Good
71	Pump, E. C. Wilson, Cockeysville, A. M. Quick, Water Engineer, No. 151	Mar. 11	150	Absent	Absent	Good
72	Artesian well, W. K. Cromwell, Lake Roland	Mar. 16	0	Absent	Absent	Good
73	No. 1, well, Robert Coxon, Gardensville	Mar. 19	90	Present	......	Bad
74	No. 2, spring, Robert Coxon, Gardensville	Mar. 19	1,500	Present	......	Bad
75	Open spring in woods on Mr. Norris' place, Dr. W. C. Stone, Ellicott City	Mar. 20	48	Absent	Absent	Good
76	Covered spring, Mr. Murray's place, Dr. W. C. Stone, Ellicott City	Mar. 20	10	Absent	Absent	Good
77	Covered spring, Mr. Norris' place, Dr. W. C. Stone, Ellicott City	Mar. 20	20	Absent	Absent	Good
78	Open spring in woods, Mr. Murray's place	Mar. 20	5	......	Present	Bad
79	Hogshead receiving water from covered spring of E. F. Parks, Timonium, A. M. Quick	Mar. 25	150	Absent	Absent	Suspiciuos
80	No. 1, Chestnut spring, F. W. Rich, Mechanicsville	Mar. 25	1,500	Absent	Absent	Suspicious *
81	No. 2, Pickerton's well, Dr. F. W. Rich, Mechanicsville	Mar. 25	4,400	Absent	Absent	Suspicious *
82	No. 3, crystal spring, Dr. F. W. Rich, Mechanicsville	Mar. 25	180	Absent	Absent	Good
83	No. 4, spring box, Dr. F. W. Rich, Mechanicsville	Mar. 25	82	Absent	Absent	Good
84	Artesian well, Robert Pilson, Towson	Apr. 2	900	Present	Present	Bad
85	No. 1, kitchen spigot, Tome Institute, Dr. H. L. Rich, Port Deposit	Apr. 6	48	Absent	Absent	Good
86	No. 2, spigot, Jackson Hall, Tome Institute, Dr. H. L. Rich, Port Deposit	Apr. 6	150	Absent	Absent	Good
87	No. 3, spigot, Memorial Hall, Tome Institute, Dr. H. L. Rich, Port Deposit	Apr. 6	60	Absent	Absent	Good
88	No. 4, spigot, Washington Hall, Tome Institute, Dr. H. L. Rich, Port Deposit	Apr. 6	200	Present	......	Bad
89	No. 5, spigot, Carson's drug store, Dr. H. L. Rich, Port Deposit	Apr. 6	120	Present	Present	Bad
90	No. 6, soda fountain, Carson's drug store, Dr. H. L. Rich, Port Deposit.	Apr. 6	300	Absent	Absent	Suspicious †
91	No. 7, carbonated water, Carson's drug store, Dr. H. L. Rich, Port Deposit	Apr. 6	60	Absent	Absent	Suspicious †
92	No. 8, spigot, Junior Building, Dr. H. L. Rich, Port Deposit	Apr. 6	240	Present	......	Bad
93	Dr. Beitler, Halethorp	Apr. 15	640	Absent	Absent	Good
94	No. 1, spring, E. M. Sullivan, Westminster	Apr. 16	75	Present	......	Bad

95	No. 2, well, E. M. Sullivan, Westminster	Apr.	16	2,000	Present	Present	Bad
96	No. 3, stream, E. M. Sullivan, Westminster	Apr.	16	1,200	Present	......	Bad
97	Burt tavern well, Mrs. R. B. Keyser, Pikesville	Apr.	16	5,000	Absent	Absent	Suspicious *
98	Well, Arcadia, Upper Falls, Dr. W. B. Platt, 802 Cathedral St., city	Apr.	17	300	Absent	Absent	Good
99	No. 1, well, Mrs. Ellis, Sharptown, Dr. C. R. Truitt, Salisbury	Apr.	26	6,000	Absent	Absent	Suspicious *
100	No. 2, well at school-house, Sharptown, Dr. C. R. Truitt, Salisbury	Apr.	26	5,000	Absent	Absent	Suspicious *
101	No. 3, well, Mrs. Williams, Sharptown, Dr. C. R. Truitt, Salisbury	Apr.	26	Liquefied	Absent	Absent	Good
102	No. 4, stream, Salisbury, Dr. C. R. Truitt, Salisbury	Apr.	26	5,000	Present	Present	Bad
103	No. 5, city water, Salisbury, Dr. C. R. Truitt, Salisbury	Apr.	26	1,500	Absent	Absent	Suspicious *
104	No. 6, well, Mrs. Burton, Salisbury, Dr. C. R. Truitt, Salisbury	Apr.	26	2,500	Present	Present	Bad
105	F. B. Gaither, National Mechanics Bank, three and a half miles from Annapolis	May	3	3,600	Present	Present	Bad
106	No. 2, three and a half miles from Annapolis, F. B. Gaither, National Mechanics Bank	May	3	4,800	Present	......	Bad
107	No. 1, Baltimore County Water and Electric Company, Catonsville reservoir	May	6	24	Absent	Absent	Good
108	spigot, bar-room, reservoir No. 1, First National Hotel, Westminster	May	7	40	Absent	Absent	Good
109	Spigot, bar-room, reservoir No. 2, Albion Hotel, Westminster	May	7	18	Present	......	Bad
110	Spigot, kitchen, reservoir No. 1, Westminster Hotel, Westminster	May	7	48	Present	Present	Bad
111	Reservoir, No. 2, Westminster	May	7	12	Absent	Absent	Good
112	Reservoir No. 1, Westminster	May	7	210	Absent	Absent	Good
113	Spigot, dining-room, Western Maryland College, Westminster, reservoir No. 1	May	7	5	Absent	Absent	Good
114	Spigot, laundry, reservoir No. 2, Western Maryland College, Westminster	May	7	600	Absent	Absent	Fair
115	Spigot, kitchen, Mrs. J. A. C. Sipps, Frederick	May	7	24	Absent	Absent	Suspicious †
116	Spigot in mill, Union Manufacturing Company, Frederick	May	7	18	Absent	Absent	Good
117	Reservoir No. 1, Frederick	May	7	24	Absent	Absent	Good
118	No. 1, private well, W. W. Bell, Upper Falls, Dr. J. F. H. Gorsuch	May	10	5,000	Absent	Absent	Suspicious *
119	No. 2, private well, Mrs. J. De Moss, Upper Falls, Dr. J. F. H. Gorsuch, Fork	May	10	Liquefied	......	Present	Bad
120	No. 3, private well, A. Stinchcumb, Upper Falls, Dr. J. F. H. Gorsuch, Fork	May	10	Liquefied	Present	Present	Bad
121	No. 4, private well, J. Nichols, Upper Falls, Dr. J. F. H. Gorsuch, Fork	May	10	Liquefied	Absent	Absent	Suspicious †
122	No. 5, private well, H. Walsh, Upper Falls, Dr. J. F. H. Gorsuch	May	10	Liquefied	Present	......	Bad
123	No. 6, private well, A. Stinchcumb, Upper Falls, Dr. J. F. H. Gorsuch, Fork	May	10	Liquefied	Present	Present	Bad
124	No. 20, private spring, H. Walsh, Upper Falls, Dr. J. F. H. Gorsuch, Fork	May	10	1,200	......	Present	Bad
125	No. 1, private well in cellar, J. Levering, Ruxton, 201 Stewart Building, city	May	11	1,200	Absent	Absent	Suspicious *
126	No. 2, private pipe leading to kitchen, Ruxton, J. Levering, 201 Stewart Building	May	11	1,000	Absent	Absent	Suspicious *
127	No. 1, private spigot in kitchen, Tome Institute, Dr. H. L. Rich, Port Deposit	May	12	60	Absent	Absent	Good

TABLE NO. 2—CONTINUED.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus,		Quality of Water.
				10 c. c.	1 c. c.	
128	No. 2, private spigot in Jackson Hall, Dr. H. L. Rich, Port Deposit	May 12	36	Absent	Absent	Good
129	No. 3, private spigot in Memorial Hall, Dr. H. L. Rich, Port Deposit	May 12	30	Absent	Absent	Good
130	No. 4, public spigot in Washington Hall, Dr. H. L. Rich, Port Deposit	May 12	72	Present	......	Bad
131	No. 5, public spigot, Carson's drug store, Dr. H. L. Rich, Port Deposit	May 12	240	Present	......	Bad
132	No. 6, public spigot, soda fountain, Carson's drug store, Dr. H. L. Rich, Port Deposit	May 12	36	Absent	Absent	Good
133	No. 7, private spigot, carbonated water, Carson's drug store, Dr. H. L. Rich	May 12	3	Absent	Absent	Good
134	No. 8, public spigot, Junior Building, Dr. H. L. Rich, Port Deposit	May 12	60	......	Present	Bad
135	Lower sedimentation tank, Rising Sun, Dr. M. L. Price, State Board of Health	May 20	720	Absent	Absent	Suspicious †
136	Effluent at discharge in stream, Rising Sun, Dr. M. L. Price, State Board of Health	May 20	1,500	Absent	Absent	Suspicious †
137	Sample from separator before electrolysis, Rising Sun, Dr. M. L. Price.	May 20	3,000	Present	......	Bad
138	Upper tank sedimentation, Rising Sun, Dr. M. L. Price, State Board of Health	May 20	1,200	Present	......	Bad
139	Stream above effluent discharge, Rising Sun, Dr. M. L. Price, State Board of Health	May 20	480	Present	......	Bad
140	Stream one-quarter of mile below effluent, Rising Sun, Dr. M. L. Price, State Board of Health	May 20	300	Absent	Absent	Suspicious †
141	Well at Pikesville, Roland L. Bentley, care of Bentley, Shriver & Co.	May 20	480	Present	Present	Bad
142	Well at Pikesville, Roland L. Bentley, care of Bentley, Shriver & Co.	May 20	480	Present	Present	Bad
143	Elevated tank, Maryland State Rifle Range, Glen Burnie	May 20	15	Absent	Absent	Good
144	Spigot on range near kitchen, Maryland State Rifle Range, Glen Burnie.	May 20	5	Absent	Absent	Good
145	Spigot in kitchen of range keeper, Maryland State Rifle Range, Glen Burnie	May 20	12	Absent	Absent	Good
146	Artesian well, pump house, Maryland State Rifle Range, Glen Burnie	May 20	10	Absent	Absent	Good
147	No. 1, H. L. Holden, Elliott's spring, Dr. Travers, Easton	May 22	1,800	Absent	Absent	Suspicious *
148	No. 2, spigot, H. L. Holden, Dr. Travers, Easton	May 22	Liquefied	Absent	Absent	Suspicious †
149	Well, Mrs. H. P. Gross, Dr. A. L. Wilkinson, Raspeburg, No. 1	May 27	3,000	Present	Present	Very bad
150	No. 2, spigot in kitchen, Mrs. H. P. Gross, Dr. A. L. Wilkinson, Raspeburg	May 27	1,200	Present	Present	Very bad
151	No. 1, spring, Frederick Hirst, Dr. B. W. Goldsborough, Cambridge	June 1	3,600	Present	......	Very bad
152	No. 2, spring, Frederick Hirst, Dr. B. W. Goldsborough, Cambridge	June 1	1,800	Present	Present	Very bad
153	Discharge of filter plant, Sheppard and Pratt Hospital, A. M. Quick, Water Engineer	June 4	5,000	Present	Present	Very bad
154	Well, George Smith, White Marsh, Dr. J. W. Harrison, Middle River.	June 5	1,200	Present	Present	Very bad
155	Well, F. B. Gaither, Arnold's Station	June 6	5,000	Present	Present	Very bad

156	Ram supply, Albert P. Stroebel, Pikesville	June 8	3,600	Absent	Absent	Bad*
157	No. 1, spring, W. Kennedy Cromwell, Lake Roland	June 12	300	Absent	Absent	Good
158	No. 2, Reservoir of springs, W. Kennedy Cromwell, Lake Roland	June 12	100	Absent	Absent	Good
159	Spring at Pikesville, F. H. Zimmerman, Gaither Building, 111 North Charles street	June 15	1,200	Present	......	Bad
160	No. 1, spring near dwelling, Leonard Levering, Orange Grove, Howard County	June 16	900	Present	......	Bad
161	No. 2, spring box of another, Leonard Levering, Orange Grove, Howard County	June 16	5,000	Present	Present	Very bad
162	No. 3, spring at tenant's house, Leonard Levering, Orange Grove, Howard County	June 16	800	Present	Present	Very bad
163	No. 4, spring near large ram, Leonard Levering, Orange Grove, Howard County	June 16	5,000	Present	......	Very bad
164	Surface well, H. C. Pritchett, Dr. P. S. Stansbury, Wingate	June 21	900	Present	Present	Bad
165	No. 1, dairy spring, R. C. Norris, Orange Grove, Dr. Rohrer, State Board of Health	June 22	120	Present	Present	Bad
166	No. 2, upper ram, R. C. Norris, Orange Grove, Dr. Rohrer, State Board of Health	June 22	30	Absent	Absent	Good
167	No. 3, Colt's field, R. C. Norris, Orange Grove, Dr. Rohrer, State Board of Health	June 22	30	Present	Present	Bad
168	Driven well, Dr. H. V. Harbaugh, East New Market	June 23	5,000	Absent	Absent	Suspicious *
169	Artesian well, Mr. Norris, Homeland Station, Dr. Harry Algire, Roland Park	June 23	120	Absent	Absent	Suspicious †
170	Dam, power house, stream, Springfield State Hospital, NoN. 1	July 1	150	Present	Present	Very bad
171	Spigot, men's group, Springfield State Hospital, No. 2	July 1	30	Absent	Absent	Suspicious †
172	Artesian well, Springfield State Hospital, No. 3	July 1	120	Absent	Absent	Good
173	Spring, Buttercup cottage, women's group, Springfield State Hospital No. 4	July 1	240	Absent	Absent	Good
174	Spring, women's group, Springfield State Hospital, No. 5	July 1	72	Absent	Absent	Good
175	Spigot, women's group, Springfield State Hospital, No. 6	July 1	60	Present	......	Bad
176	Ram on property of Mr. Stroehel, Dr. H. A. Naylor, Pikesville, No. 1	July 1	90	Present	Present	Very bad
177	Well, Mr. Stroehel, Dr. H. A. Naylor, Pikesville, No. 2	July 1	42	Absent	Absent	Suspicious †
178	Spring, Mr. Stroebel, Dr. H. A. Naylor, Pikesville, No. 3	July 1	24	Present	Present	Very bad
179	Spring, Mr. Stroebel, Dr. H. A. Naylor, Pikesville, No. 4	July 1	36	Present	Present	Very bad
180	No. 1, artesian well, Clinton Place, Dr. B. W. Goldsborough, Cambridge.	July 1	180	Absent	Absent	Good
181	No. 2, artesian well, Clinton Place, Dr. B. W. Goldsborough, Cambridge.	July 1	240	Absent	Absent	Good
182	Pump at Pikesville, James H. Preston, 218 St. Paul street, city	July 7	300	Present	Present	Very bad
183	Spring at Pikesville, James H. Preston, 218 St. Paul street, city	July 7	480	Present	Present	Very bad
184	No. 1, well, Joshua Levering, Preston	July 8	120	Absent	Absent	Good
185	No. 2, spring at dairy, Joshua Leverlng, Preston	July 8	210	Absent	Absent	Suspiciuos
186	No. 3, lower spring, Joshua Levering, Preston	July 8	150	Present	Present	Very bad
187	No. 1, school spring, Joseph Holland, Cowenton	July 12	900	Present	......	Bad
188	Public pump, B. & O. R. R. Station, Cowenton	July 12	750	Present	......	Bad
189	Well, Edward Poole, Cowenton	July 12	210	Absent	Absent	Good
190	No. 1, artesian well, Mrs. W. J. Burke, Vacation Lodge, Blue Ridge Summit, Pa.	July 13	1,200	Present	Present	Very bad

TABLE NO. 2—CONTINUED.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus, 10 c. c.	Colon Bacillus, 1 c. c.	Quality of Water.
191	No. 2, spigot from well, Mrs. W. J. Burke, Vacation Lodge, Blue Ridge Summit, Pa.	July 13	4,200	Present	......	Very bad
192	No. 1, pump of W. Hyde, Dr. J. Watt, Union Bridge	July 13	600	Present	......	Bad
193	No. 2, pump of William Haines, Dr. J. Watt, Union Bridge	July 13	3,000	Present	Present	Very bad
194	No. 3, pump of D. Baker, Dr. J. Watt, Union Bridge	July 13	1,200	Present	......	Bad
195	No. 4, reservoir, spigot, Dr. J. Watt, Union Bridge	July 13	3,600	Present	Present	Very bad
196	Well on Liberty road, near Rockdale, Dr. James Bosley, City Hall Annex	July 13	2,400	Present	......	Very bad
197	No. 1, water from reservoir, Severn, P. C. Dugan & Nephew, 16 East Lexington street	July 15	150	Absent	Absent	Good
198	No. 2, water from cool spring, P. C. Dugan & Nephew, 16 East Lexington street	July 15	400	Absent	Absent	Good
199	No. 1, well, V. G. Pew, Dr. Hugh Strachen, Kitzmillers	July 17	1,500	Absent	Absent	Suspicious *
200	No. 2, well, H. L. Pool, Dr. Hugh Strachen, Kitzmillers	July 17	1,500	Absent	Absent	Suspicious *
201	No. 3, well, W. S. Pew, Dr. Hugh Strachen, Kitzmillers	July 17	1,800	Present	Present	Very bad
202	No. 4, well, J. W. Wilson, Dr. Hugh Strachen, Kitzmillers	July 17	1,200	Present	......	Bad
203	No. 5, well, B. M. C. Co., Dr Hugh Strachen, Kitzmillers	July 17	1,200	Present	Present	Very bad
204	No. 6, spigot, J. E. Chappell, Dr. Hugh Strachen, Kitzmillers	July 17	1,200	Present	Present	Very bad
205	No. 7, well, C. E. Raften, Dr. Hugh Strachen, Kitzmillers	July 17	1,800	Absent	Absent	Suspicious *
206	No. 8, spring, Mrs. M. E. Kitzmiller, Dr. Hugh Strachen, Kitzmillers	July 17	2,400	Present	......	Bad
207	No. 9, well, Mrs. M. E. Kitzmiller, Dr. Hugh Strachen, Kitzmillers	July 17	180	Absent	Absent	Good
208	No. 10, well, Mrs. Craver, Dr. Hugh Strachen, Kitzmillers	July 17	1,200	Present	......	Bad
209	No. 11, well, G. B. Pew, Dr. Hugh Strachen, Kitzmillers	July 17	900	Absent	Absent	Fair
210	No. 12, well, R. A. Smith, Dr. Hugh Strachen, Kitzmillers	July 17	2,300	Present	Present	Very bad
211	No. 1, spring (pool No. 2), Dr. H. G. Simpers, Chestertown	July 20	300	Present	......	Bad
212	No. 2, spring and well (pool No. 1), Dr. H. G. Simpers, Chestertown	July 20	300	Present	......	Bad
213	No. 3, pump of W. Newmans, Dr. H. G. Simpers, Chestertown	July 20	150	Absent	Absent	Suspicious †
214	Sanitarium, Dr. V. F. Cullen, Maryland Tuberculosis Sanitarium	July 22	1,200	Present	Present	Very bad
215	Spring, Mt. Saint Agnes' College, Mt. Washington	July 22	180	Present	......	Bad
216	Well, Mt. Saint Agnes' College, Mt. Washington	July 22	900	Absent	Absent	Fair
217	Well of Philip Myers, Dr. T. W. Brayshaw, Glen Burnie	July 24	300	Absent	Absent	Good
218	No. 1, well, Mr. Walston, Dr. C. R. Truitt, Salisbury	July 28	480	Absent	Absent	Good
219	No. 2, well of Mary Burns, Dr. C. R. Truitt, Salisbury	July 28	1,200	Absent	Absent	Suspicious *
220	No. 3, open well, Mrs. Parker, Dr. C. R. Truitt, Salisbury	July 28	2,400	Present	Present	Very bad
221	No. 4, well of L. T. Cooper, Dr. C. R. Truitt, Salisbury	July 28	900	Absent	Absent	Fair
222	No. 5, well of Levin Price, Dr. C. R. Truitt, Salisbury	July 28	2,400	Absent	Absent	Suspicious *
223	No. 6, deep well, Salisbury shirt factory	July 28	Liquefied	Absent	Absent	Suspiciuos
224	No. 7, well of C. R. Truitt, Dr. C. R. Truitt, Salisbury	July 28	3,000	Present	Present	Very bad

225	No. 8, spigot, Salisbury Water Company, East End, Dr. C. R. Truitt, Salisbury	July 28	480	Absent	Absent	Good
226	No. 9, spigot, Salisbury Water Company. West End, Dr. C. R. Truitt, Salisbury	July 28	1,200	Absent	Absent	Suspicious *
227	No. 10, stream, Dr. C. R. Truitt, Salisbury	July 28	Liquefied	Present	Present	Very bad
228	No. 1, ice plant, Chestertown	July 30	48	Present	......	Bad
229	No. 2, public pump, Santiago, Chestertown	July 30	180	Present	......	Bad
230	No. 3, Calvert street pump, Hall property, Chestertown	July 30	1,800	Present	......	Bad
231	No. 4, Calvert street well, Bethel Church, Chestertown	July 30	5,000	Present	......	Very bad
232	No. 5, High street pump, John F. Howard, Chestertown	July 30	600	Absent	Absent	Good
233	No. 6, private pump, Wm. T. Duyer, Chestertown	July 30	1,500	Present	Present	Very bad
234	No. 7, new pool (condemned), Chestertown	July 30	420	Present	......	Bad
235	No. 8, private pump, M. E. Parsonage, Chestertown	July 30	480	Present	Present	Very bad
236	No. 9, spigot at pump-house, main town supply, Chestertown	July 30	15	Present	......	Bad
237	No. 13, private pump, Washington College, Chestertown	July 30	3,000	Present	......	Very bad
238	No. 14, private well, Harry Burke, Chestertown	July 30	900	Present	Present	Very bad
239	No. 1, Dr. F. J. Flannery, Mt. Hope	Aug. 2	Not made	Present	Present	Very bad
240	No. 2, Dr. F. J. Flannery, Mt. Hope	Aug. 2	Not made	Present	Present	Very bad
241	Well of Clarence Scosser, Dr. Zach R. Morgan, Mechanicsville	Aug. 3	900	Present	Present	Very bad
242	Well of Alonzo Reynolds, Reisterstown road, Dr. L. R. Palmer, 1021 Madison avenue	Aug. 3	600	Present	Present	Very bad
243	No. 1, spring, Maccabean Home, Brightside	Aug. 3	36	Absent	Absent	Good
244	No. 2, well, Maccabean Home, Brightside	Aug. 3	300	Present	Present	Very bad
245	Well, Robert Lovell, Overlea	Aug. 5	240	Absent	Absent	Good
246	No. 1, branch from Primrose farm, Baltimore Manual Labor School	Aug. 6	Liquefied	Present	Present	Bad
247	No. 2, branch of ram water, Baltimore Manual Labor School	Aug. 6	Liquefied	Present	......	Bad
248	No. 3, water from artesian well, Baltimore Manual Labor School	Aug. 6	Liquefied	Absent	Absent	Good
249	No. 4, left branch of ram water, Baltimore Manual Labor School	Aug. 6	Liquefied	......	Present	Bad
250	No. 5, ice pond, Baltimore Manual Labor School	Aug. 6	Liquefied	Present	Present	Bad
251	No. 6, pump at Gable house, Baltimore Manual Labor School	Aug. 6	Liquefied	......	Present	Bad
252	No. 7, stream, Baltimore Manual Labor School	Aug. 6	Liquefied	Present	Present	Bad
253	No. 1, Mr. Borelet, from house, Dr. J. C. Joyce, Arnolds	Aug. 7	Liquefied	Present	Present	Bad
254	No. 2, Mr. Borelet, from barnyard, Dr. J. C. Joyce, Arnolds	Aug. 7	Liquefied	Present	Present	Bad
255	No. 1, well at Wheeler house, Boonsboro, Dr. J. E. Pitsnogle, Hagerstown	Aug. 7	Liquefied	Present	Present	Bad
256	No. 2, spigot at Wheeler house, Boonsboro, Dr. J. E. Pitsnogle, Hagerstown	Aug. 7	18	Absent	Absent	Good
257	No. 3, reservoir, Boonsboro, Dr. J. E. Pitsnogle, Hagerstown	Aug. 7	200	Absent	Absent	Good
258	No. 4, public well, Roudebush yard, Dr. J. E. Pitsnogle, Hagerstown	Aug. 7	1,200	Present	Present	Very bad
259	No. 1, stream, Kendall branch, Takoma Park, Dr. M. L. Price, State Board of Health	Aug. 7	Liquefied	Present	Present	Bad
260	No. 2, stream, Silver Spring, Takoma Park, Dr. M. L. Price, State Board of Health	Aug. 7	Liquefied	Present	Present	Bad
261	No. 3, stream, Sligs about 500 feet above Silver Spring, Dr. M. L. Price	Aug. 7	Liquefied	......	Present	Bad
262	No. 4, stream, Belmont farm branch, Takoma Park, Dr. M. L. Price	Aug. 7	Liquefied	......	Present	Bad
263	No. 5, well at pumping house, Takoma Park, Dr. M. L. Price	Aug. 7	Liquefied	......	Present	Bad

TABLE NO. 2—CONTINUED.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus,		Quality of Water.
				10 c. c.	1 c. c.	
264	No. 6, spring on grounds seventh Don Adventure, Dr. M. L. Price, State Board of Health	Aug. 7	Liquefied	Absent	Absent	Suspicious †
265	No. 7, spigot in kitchen, Takoma Park, Dr. M. L. Price, State Board of Health	Aug. 7	Liquefied	......	Present	Bad
266	C. F. Dafner, Gardenville	Aug. 9	Liquefied	Present	Present	Bad
267	Spring, John W. Hanson, Elkridge	Aug. 9	Liquefied	......	Present	Bad
268	Well, William Wade, Dr. H. A. Naylor, Pikesville	Aug. 9	Liquefied	Absent	Absent	Suspicious †
269	Well, Mr. Wampler, Dr. H. A. Naylor, Pikesville	Aug. 9	Liquefied	Present	......	Bad
270	No. 1, well of Spring Lake dairy house, Dr. H. S. Naylor, Pikesville	Aug. 9	Liquefied	Present	Present	Bad
271	No. 2, well of Spring Lake dairy house, Dr. H. A. Naylor, Pikesville	Aug. 9	Liquefied	Present	......	Bad
272	Well at wash house, Dr. H. A. Naylor, Pikesville	Aug. 9	Liquefied	Present	......	Bad
273	Well at barn, Dr. H. A. Naylor, Pikesville	Aug. 9	Liquefied	Present	......	Bad
274	Well, J. P. Biays, Relay	Aug. 10	1,200	Absent	Absent	Suspicious †
275	Spring, J. P. Biays, Relay	Aug. 10	1,200	Present	......	Bad
276	Artesian spigot, Dr. F. E. Jameson, Newport	Aug. 10	100	Absent	Absent	Good
277	Spring, John W. Hanson, Elkridge	Aug. 10	Liquefied	Absent	Absent	Suspicious †
278	Spring, St. Agnes' College, Mt. Washington	Aug. 10	3,000	......	Present	Very bad
279	No. 1, public Tuillies well, State Board of Health, Chestertown	Aug. 11	5,000	Present	......	Very bad
280	No. 2, public well, M. E. Church, State Board of Health, Chestertown	Aug. 11	1,200	Present	Present	Bad
281	No. 3, public well, Maple avenue, State Board of Health, Chestertown	Aug. 11	3,000	Present	......	Very bad
282	No. 4, private well, T. W. Elliason, State Board of Health, Chestertown.	Aug. 11	420	Absent	Absent	Good
283	No. 5, private well, A. L. Wright, State Board of Health, Chestertown.	Aug. 11	420	Absent	Absent	Suspicious †
284	No. 6, private well, W. P. Newman, State Board of Health, Chestertown	Aug. 11	900	Present	Present	Bad
285	No. 7, private well, Enoch Pleasanton, State Board of Health, Chestertown	Aug. 11	1,200	Present	......	Bad
286	No. 8, private well, Arthur Joyner, State Board of Health, Chestertown.	Aug. 11	1,500	Absent	Absent	Suspiciuos
287	No. 9, private well, W. H. Medels, State Board of Health, Chestertown	Aug. 11	1,000	Present	Present	Bad
288	No. 10, private well, R. J. McWharter, State Board of Health, Chestertown	Aug. 11	1,200	Present	Present	Bad
289	No. 1, artesian well direct, State Board of Health, Chestertown	Aug. 11	30	......	Present	Bad
290	No. 2, public pool plus artesian well, State Board of Health, Chestertown	Aug. 11	290	Absent	Absent	Good
291	Dr. F. V. Beitler, house, Halethorp	Aug. 12	....	Absent	Absent	Suspicious †
292	Dr. F. V. Beitler, well, Halethorp	Aug. 12	3,000	Absent	Absent	Bad * †
293	No. 154, pump of Kelso, Towson, A. M. Quick, Water Engineer	Aug. 13	20	Present	Present	Bad
294	No. 155, pump of N. O. Barrett, Lutherville, A. M. Quick, Water Engineer	Aug. 13	3,000	Present	Present	Very bad
295	Pump of Mrs. C. Boyd, Rider, A. M. Quick, Water Engineer	Aug. 13	600	Present	Present	Bad

296	Spring of H. C. McComas, Roland Park, A. M. Quick, Water Engineer..	Aug. 13	150	Present	......	Bad
297	Spigot, J. R. Wood, Lutherville, A. L. Browne, 213 Courtland street, City	Aug. 13	Liquefied	......	Present	Bad
298	No. 1, five wells supplying reservoir, Dr. J. Watt, Union Bridge	Aug. 13	15	Present	Present	Bad
299	No. 2, reservoir, Dr. J. Watt, Union Bridge	Aug. 13	300	Present	Present	Bad
300	No. 3, spigot drawn from reservoir, Dr. J. Watt, Union Bridge	Aug. 13	1,200	Present	Present	Bad
301	No. 4, well of F. Shringer, Dr. J. Watt, Union Bridge	Aug. 13	120	Present	Present	Bad
302	No. 5, well of S. D. Senseny, Dr. J. Watt, Union Bridge	Aug. 13	600	Present	Present	Bad
303	Well of George Zunbaum, Dr. J. Watt, Union Bridge	Aug. 13	2,100	Absent	Absent	Bad * †
304	No. 1, spring, Dr. Coonan, Westminster	Aug. 16	5,000	Present	Present	Very bad
305	No. 2, pump, Dr. Coonan, Westminster	Aug. 16	3,000	Absent	Absent	Suspicious *
306	No. 1, spigot, Dr. I. N. King, Barstow	Aug. 17	Not made	Absent	Absent	Good
307	No. 2, well, Wm. B. Stafford, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	......	Bad
308	No. 3, spring, S. L. Lusby, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	......	Bad
309	No. 4, T. B. Gourley, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	Present	Very bad
310	No. 5, well, J. E. Ward, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	......	Bad
311	No. 6, W. H. Donnell, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	Present	Very bad
312	No. 7, well, W. D. Sterling, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	Present	Very bad
313	No. 8, spigot, S. J. Hammett, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	Present	Very bad
314	No. 9, well, Thomas Sedwick, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	Present	Very bad
315	No. 10, well of Earney Wood, Dr. I. N. King, Barstow	Aug. 17	Not made	Present	Present	Very bad
316	No. 1, spring, Dr. Richard Gundry, Catonsville	Aug. 18	360	Present	Present	Very bad
317	No. 2, Catonsville water supply, Dr. Richard Gundry, Catonsville	Aug. 18	5,000	Absent	Absent	Suspiciuos
318	No. 1, spring of Frank Primrose, Dr. A. H. Mann, Jr., Catonsville	Aug. 19	5	Present	......	Bad
319	No. 2, spring of Frank Primrose, Dr. A. H. Mann, Jr., Catonsville	Aug. 19	5	Absent	Absent	Good
320	A. Fishpaw, Lutherville, A. M. Quick, Water Engineer, No. 158	Aug. 20	Liquefied	Absent	Absent	Suspicious †
321	Effluent of seminary at Lutherville, A. M. Quick, No. 159	Aug. 20	Liquefied	Present	Present	Very bad
322	Well of Grant Franklin, Dr. T. H. Brayshaw, Glen Burnie	Aug. 20	Liquefied	Absent	Absent	Good
323	No. 1, public well, Toddsville, Dr. J. M. White, Crapo	Aug. 23	6,000	Present	......	Bad
324	No. 2, well of George Bramble, Dr. J. M. White, Crapo	Aug. 23	150	Absent	Absent	Good
325	No. 3, well of S. Wheatley, Dr. J. M. White, Crapo	Aug. 23	4,800	Present	Present	Very bad
326	No. 4, well of A. Farlin, Dr. J. M. White, Crapo	Aug. 23	6,000	Present	Present	Very bad
327	No. 5, George Robinson, Dr. J. M. White, Crapo	Aug. 23	400	Present	Present	Very bad
328	No. 6, school well, Crapo, Dr. J. M. White, Crapo	Aug. 23	Innum.	Absent	Absent	Suspicious *
329	No. 7, well of W. P. Andrews, Dr. J. M. White, Crapo	Aug. 23	Innum.	Absent	Absent	Suspicious *
330	No. 1, well of Deborah Nusbaum, Dr. J. Watt, Union Bridge	Aug. 23	Liquefied	Present	Present	Very bad
331	No. 2, well of S. Minnick, Dr. J. Watt, Union Bridge	Aug. 23	2,400	Present	Present	Very bad
332	No. 3, well of P. Snyder, Dr. J. Watt, Union Bridge	Aug. 23	1,500	Present	Present	Very bad
333	No. 4, spigot of Mr. Metz, Dr. J. Watt, Union Bridge	Aug. 23	3,000	Present	......	Bad
334	No. 5, well of George Byers, Dr. J. Watt, Union Bridge	Aug. 23	Liquefied	Present	Present	Very bad
335	Mrs. Cole, Park Heights avenue, Dr. N. A. D. Cox, Arlington	Aug. 23	3,000	Present	Present	Very bad
336	Well of Grant Franklin, Glen Burnie, Dr. J. J. Murphy, Annapolis	Aug. 23	600	Absent	Absent	Good
337	Well, Dr. L. Higdon, Wayside	Aug. 23	Liquefied	Present	Present	Very bad
338	Pump of Benjamin Chenowith, A. M. Quick, No. 160	Aug. 23	60	Present	......	Bad
339	Spring of John Greets, A. M. Quick, No. 161	Aug. 23	75	Present	......	Bad
340	Pump of Mrs. Catherine Brown, A. M. Quick, No. 162	Aug. 23	600	Present	Present	Very bad

TABLE NO. 2—CONTINUED.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus, 10 c. c.	Colon Bacillus, 1 c. c.	Quality of Water.
341	Well, St. Vincent's Asylum	Aug. 23	60	Present	......	Bad
342	Barn supply, St. Vincent's Asylum	Aug. 23	150	Present	Present	Very bad
343	G. C. Morrison, W. C. Orem, Parkton	Aug. 24	1,200	Present	Present	Very bad
344	S. B. K. Claggett, Relay	Aug. 24	75	Present	......	Bad
345	S. B. K. Claggett, Relay	Aug. 24	Liquefied	Present	......	Bad
346	No. 1, spigot, Atlantic Hotel, Dr. J. A. Luetscher, Ocean City, Md.	Aug. 25	120	Absent	Absent	Good
347	No. 2, spigot, city artesian well, Dr. J. A. Luetscher, Ocean City, Md.	Aug. 25	150	Absent	Absent	Good
348	No. 3, pump, Seaside Hotel, Dr. J. A. Luetscher, Ocean City, Md.	Aug. 25	18	Absent	Absent	Good
349	No. 4, private artesian well, Plinhimmon Hotel, Dr. J. A. Luetscher, Ocean City, Md.	Aug. 25	24	Present	......	Bad
350	No. 5, pump, Mrs. Massey, Hamilton Hotel, Dr. J. A. Luetscher, Ocean City, Md.	Aug. 25	0	Absent	Absent	Good
351	Well, S. A. Von Riesen, Lutherville	Aug. 27	3,000	Absent	Absent	Suspicious *
352	No. 1, driven well, Samuel Burrham, Dr. L. G. Smart, Lutherville	Aug. 30	280	Present	......	Bad
353	No. 2, well, W. W. Boyce, Dr. L. G. Smart, Lutherville	Aug. 30	12	Absent	Absent	Good
354	No. 3, spring, Creighton, Dr. L. G. Smart, Lutherville	Aug. 30	10	Present	......	Bad
355	No. 1, well on golf course, Sudbrook Park, Dr. H. A. Naylor, Pikesville.	Aug. 30	600	Present	Present	Very bad
456	No. 2, well supplying house, St. Vincent's Asylum, Dr. H. A. Naylor, Pikesville	Aug. 30	420	Absent	Absent	Suspicious ‡
357	No. 3, well, dairy barn, St. Vincent's Asylum, Dr. H. A. Naylor, Pikesville	Aug. 30	1,800	Present	......	Very bad
358	No. 1, spring, Buttercup Cottage, Springfield State Hospital, Sykesville.	Aug. 31	1,200	Present	......	Bad
359	No. 2, spring, women's group, Springfield State Hospital	Aug. 31	18	Absent	Absent	Good
360	No. 3, spigot, women's group, Springfield State Hospital	Aug. 31	180	Present	Present	Very bad
361	No. 4, well, men's group, Springfield State Hospital	Aug. 31	120	Absent	Absent	Good
362	No. 5, spigot, men's group, Springfield State Hospital	Aug. 31	30	Present	......	Bad
363	No. 6, dam, power-house, Springfield State Hospital	Aug. 31	1,200	Present	......	Bad
364	No. 1, well, Dr. C. L. Wachter, Sabillasville	Aug. 31	No count	Present	......	Bad
365	Pump, Mrs. J. R. Robinson, Lutherville, A. M. Quick, No. 163	Sept. 1	60	Present	Present	Very bad
366	Pump, Edwin Moore, Parkton, A. M. Quick, No. 164	Sept. 1	420	Present	Present	Very bad
367	Pump of Andrew H. Mehl, A. M. Quick, No. 165	Sept. 1	90	Absent	Absent	Good
368	No. 1, pump, flow pipe in tank, J. H. Preston, Pikesville	Sept. 2	72	Absent	Absent	Good
369	No. 2, spring No. 1, J. H. Preston, Pikesville	Sept. 2	1,600	Absent	Absent	Suspicious *
670	No. 3, spring No. 2, J. H. Preston, Pikesville	Sept. 2	60	Absent	Absent	Good
371	No. 4, spring No. 4, J. H. Preston, Pikesville	Sept. 2	2,260	Absent	Absent	Suspicious *
372	Pump of Michael Barrett, Lutherville, A. M. Quick, No. 166	Sept. 3	360	Present	......	Bad
373	Pump of Henrietta Sultzer, Lutherville, A. M. Quick, No. 167	Sept. 3	60	Present	Present	Very bad
374	Pump of Julius Rudiger, Towson, A. M. Quick, No. 168	Sept. 3	60	Present	......	Bad

375	Spring, Dr. J. G. Thomas, Adamstown	Sept. 3	1,200	Present	......	Bad
376	No. 1, well at barn of Joshua Wrightson, Dr. J. H. Hope, McDaniel	Sept. 3	600	Present	......	Bad
377	No. 2, ice drippings, J. Wrightson, Dr. J. H. Hope, McDaniel	Sept. 3	Liquefied	Present	......	Bad
378	No. 3, artesian well, Dr. J. H. Hope, McDaniel	Sept. 3	48	Present	......	Bad
379	No. 1, water from P. Meredith, Dr. Victor Carroll, Cambridge	Sept. 3	900	Present	......	Bad
380	No. 2, water from P. Meredith, Dr. Victor Carroll, Cambridge	Sept. 3	150	Absent	Absent	Good
381	No. 1, well of Wm. G. Hoffman, Dr. H. A. Naylor, Pikesville	Sept. 3	660	Present	Present	Very bad
382	No. 2, dairy supply, St. Vincent's Asylum, Dr. H. A. Naylor, Pikesville	Sept. 3	48	Present	......	Bad
383	No. 3, well, house and drinking supply, Dr. H. A. Naylor, Pikesville	Sept. 3	90	Present	......	Bad
384	No. 4, well, superintendent's house, St. Vincent's Asylum, Dr. H. A. Naylor, Pikesville					
385	Pump of Francis Heins, Towson, A. M. Quick, No. 169	Sept. 3	600	Present	Present	Very bad
386	Patapsco, Towson Water Company, A. M. Quick, No. 170	Sept. 6	300	Absent	Absent	Suspicious ‡
387	Well, J. Thomas Gannon, near Easton, John P. Stelle, 300 Union Trust Building	Sept. 6	5	Absent	Absent	Good
388	Baltimore county water, September 8, 1909, Dr. Marshall L. Price	Sept. 8	2,400	Absent	Absent	Suspicious * ‡
389	No. 1, well, Norway Maple farm, Dr. Harry Wegefarth, 3 West North avenue	Sept. 8	300	Present	Present	Very bad
390	No. 2, spring, Norway Maple farm, Dr. Harry Wegefarth, 3 West North avenue	Sept. 8	Liquefied	Present	Present	Very bad
391	No. 1, Clarence Sasseer, Dr. Z. R. Morgan, Mechanicsville	Sept. 8	Liquefied	Present	Present	Very bad
392	No. 2, Drucilla Thompson, Dr. Z. R. Morgan, Mechanicsville	Sept. 9	Liquefied	Present	......	Bad
393	No. 3, spring, Dan Buckler, Dr. J. R. Morgan, Mechanicsville	Sept. 9	Liquefied	Present	Present	Very bad
394	Baltimore county water, September 9, 1909, Dr. Marshall L. Price	Sept. 9	1,800	Present	......	Bad
395	No. 1, well, cistern E, Dr. V. M. Reichard, Fair Play	Sept. 9	900	Present	......	Bad
396	No. 2, well, cement reservoir, Dr. V. M. Reichard, Fair Play	Sept. 9	Liquefied	Present	......	Bad
397	No. 3, cistern H, Dr. V. M. Reichard, Fair Play	Sept. 9	600	Present	......	Bad
398	No. 4, well B, Dr. V. M. Reichard, Fair Play	Sept. 9	480	......	Present	Bad
399	No. 5, well, Wood reservoir, Dr. V. M. Reichard, Fair Play	Sept. 9	30	Present	......	Bad
400	No. 1, spring, Charles Marshall, United R. & E. Co., Penniman & Brown	Sept. 9	Liquefied	Present	Present	Bad
401	No. 2, well, Charles Marshall, United R. & E. Co., Penniman & Brown	Sept. 9	480	Absent	Absent	Good
402	Baltimore county water, Dr. M. L. Price, State Board of Health	Sept. 9	300	Absent	Absent	Good
403	No. 1, well, Dr. J. M. Moore, Cascade	Sept. 10	420	Present	Present	Bad
404	No. 2, well, Dr. J. M. Moore, Cascade	Sept. 10	Liquefied	Present	......	Bad
405	No. 1, Loch Raven, deep from middle of lake, Dr. M. L. Price, State Board of Health	Sept. 10	1,800	Absent	Absent	Suspicious * †
				Present	Present	Bad
406	No. 2, Loch Raven, Falls bridge, Dr. M. L. Price	Sept. 10	300			
407	No. 3, Lake Roland, middle of lake, Dr. M. L. Price	Sept. 10	300	Present	Present	Bad
408	No. 4, stream flowing into Lake Roland, near pump-house, Dr. M. L. Price	Sept. 10	18	Present	......	Bad
409	Baltimore county water, Dr. M. L. Price	Sept. 10	600	Absent	Absent	Suspicious †
410	No. 1, well, J. D. Watkins, Dr. I. N. Simpers, Germantown	Sept. 11	180	Absent	Absent	Suspicious †
411	No. 2, well, Dr. Simpers, Dr. I. N. Simpers, Germantown	Sept. 11	120	Absent	Absent	Good
412	No. 3, well, Rev. T. A. Richards, Dr. I. N. Simpers, Germantown	Sept. 11	720	......	Present	Bad
413	No. 4, spring, Rev. T. A. Richards, Dr. I. N. Simpers, Germantown	Sept. 11	900	Absent	Absent	Suspicious †

TABLE NO. 2—CONTINUED.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus,		Quality of Water.
				10 c. c.	1 c. c.	
414	No. 5, well, Dr. Simpers, Dr. I. N. Simpers, Germantown	Sept. 11	300	Present	......	Bad
415	No. 1, public well, E. Rowland, Paromont, Dr. J. E. Pitsnogle, Hagerstown	Sept. 11	60	......	Present	Bad
416	No. 2, spring, E. Rowland, Dr. J. E. Pitsnogle, Hagerstown	Sept. 11	300	Absent	Absent	Suspicious †
417	No. 3, well, Luther Trovinger, Paradise, Dr. J. E. Pitsnogle	Sept. 11	18	Absent	Absent	Suspicious †
418	Baltimore county water, Dr. M. L. Price, State Board of Health	Sept. 13	1,200	Absent	Absent	Suspicious *
419	Baltimore county water, Dr. M. L. Price, State Board of Health	Sept. 14	18	......	Present	Bad
420	No. 1, W. H. Hobbs, C. W. Heffinger, Sykesville	Sept. 14	240	Absent	Absent	Suspicious * ‡
421	No. 2, William Duddearer, C. W. Heffinger, Sykesville	Sept. 14	1,200	Present	Present	Very bad
422	No. 3, J. E. Beachman, C. W. Heffinger, Sykesville	Sept. 14	600	Present	......	Bad
423	Upper pump, Camp Grove, Dr. C. H. Brace, Cumberland	Sept. 14	300	Present	Present	Very bad
424	Braddock Run, Dr. C. H. Brace, Cumberland	Sept. 14	420	Absent	Absent	Good
425	Spigot (public), Camp Grove, Dr. C. H. Brace, Cumberland	Sept. 14	720	Present	Present	Very bad
426	Lower pump, Camp Grove, Dr. C. H. Brace, Cumberland	Sept. 14	3,000	Present	Present	Very bad
427	Baltimore county water, September 15, 1909, Dr. M. L. Price	Sept. 15	120	Absent	Absent	Suspicious ‡
428	Tank supplying Sherwood Park, A. M. Quick, No. 172	Sept. 15	Liquefied	Present	......	Bad
429	Well of M. Barrett, Lutherville, A. M. Quick, No. 173	Sept. 15	Liquefied	Present	......	Bad
430	No. 1, spring, Mrs. Charles Reid, Relay, L. B. K. Claggett, Calvert and German streets	Sept. 16	300	Present	......	Bad
431	No. 2, spigot, Mrs. Charles Reid, Relay, L. B. K. Claggett, Calvert and German streets	Sept. 16	3,000	Present	......	Bad
432	No. 3, spring, Edward Denby, Relay, L. B. K. Claggett, Calvert and German streets	Sept. 16	2,400	Present	......	Bad
433	No. 4, well, E. H. Worthington, Relay, L. B. K. Clagett, Calvert and German streets	Sept. 16	300	Absent	Absent	Good
434	Well, No. 2, Isaac Silver, Odenton, Dr. J. J. Murphy, Annapolis	Sept. 16	Liquefied	Absent	Absent	Suspicious †
435	Well, John Anderson, Odenton, Dr. J. J. Murphy, Annapolis	Sept. 16	1,200	Absent	Absent	Suspicious * †
436	Well, John Turner, Odenton, Dr. J. J. Murphy, Annapolis	Sept. 16	Liquefied	Present	......	Bad
437	No. 1, Miss Annie Longnecker, Glyndon, Mr. Bellas	Sept. 16	150	Present	......	Bad
438	No. 2, G. R. Bellas, Glyndon, Mr. Bellas	Sept. 16	720	Absent	......	Suspiciuos
439	Pump, Louise Domms, Bentley P. O., A. M. Quick, Water Engineer, No. 174	Sept. 16	120	Present	......	Bad
440	Drain, Maryland College, Lutherville, A. M. Quick, Water Engineer, No. 175	Sept. 16	5,000	Absent	......	Suspicious * †
441	Baltimore countly water, Dr. M. L. Price, State Board of Health	Sept. 16	54	Absent	Absent	Suspicious †
442	Well of Milton Charles, Dr. J. P. Perry, Clearspring	Sept. 20	Liquefied	Present	Present	Bad
443	Artesian well, Dr. B. Holly Smith, 1007 Madison avenue	Sept. 20	48	Present	......	Bad
444	Baltimore countly water, Dr. M. L. Price, State Board of Health	Sept. 21	36	Present	Present	Bad

445	Well, Mrs. Ludwig, Harford road, Dr. Fisher, 9 East Biddle street	Sept. 21	5,000	Present	Present	Very bad
446	Well, Bradshaw, J. Hushman, 1608 East Baltimore street	Sept. 21	2,400	Present	......	Very bad
447	Artesian well, W. K. Cromwell, Lake Roland	Sept. 21	180	Present	......	Bad
448	Spring, W. K. Cromwell, Lake Roland	Sept. 21	20	Absent	Absent	Good
449	Reservoir, W. K. Cromwell, Lake Roland	Sept. 21	50	Absent	Absent	Good
450	No. 1, well, Mrs. Bupp, Dr. H. A. Naylor, Pikesville	Sept. 21	1,800	Present	Present	Very bad
451	No. 2, well, George Buckman, Dr. H. A. Naylor, Pikesville	Sept. 21	300	Present	......	Bad
452	No. 3, well, S. C. Bottom, Dr. H. A. Naylor, Pikesville	Sept. 21	1,800	Present	Present	Very bad
453	Baltimore county water, September 22, 1909, Dr. Marshall L. Price	Sept. 22	60	Present	......	Bad
454	No. 1, well, C. W. Proctor, White Marsh	Sept. 22	180	Present	......	Bad
455	No. 2, well of J. P. Porter, C. W. Proctor, White Marsh	Sept. 22	240	Present	Present	Very bad
456	No. 3, well of E. N. Thorn, C. W. Proctor, White Marsh	Sept. 22	720	Present	Present	Very bad
457	Baltimore county water, September 23, 1909, Dr. Marshall L. Price	Sept. 23	36	Present	......	Bad
458	No. 1, S. E. Shannahan, Easton, Talbot County, Md	Sept. 23	300	Absent	Absent	Suspicious †
459	No. 2, S. E. Shannahan, Easton, Talbot County, Md	Sept. 23	300	Absent	......	Good
460	No. 3, S. E. Shannahan, Easton, Talbot County, Md	Sept. 23	300	Absent	......	Good
461	No. 4, S. E. Shannahan, Easton, Talbot County, Md	Sept. 23	1,800	Absent	......	Suspicious * †
462	No. 5, S. E. Shannahan, Easton, Talbot County, Md	Sept. 23	180	Absent	......	Good
463	No. 1, fountain, reservoir, R. Bond Baliff, Port Deposit	Sept. 23	1,200	Present	......	Bad
464	No. 2, fountain, reservoir, R. Bond Baliff, Port Deposit	Sept. 23	900	Present	......	Bad
465	No. 3, spigot, Carson's drug store, R. Bond Baliff, Port Deposit	Sept. 23	300	Present	......	Bad
466	No. 4, spigot, Check store, R. Bond Baliff, Port Deposit	Sept. 23	730	Present	......	Bad
467	No. 5, spigot, Cecil Bank, R. Bond Baliff, Port Deposit	Sept. 23	5	Absent	......	Suspicious ‡
468	No. 6, spigot, First National Bank, R. Bond Baliff, Port Deposit	Sept. 23	900	Present	......	Bad
469	Baltimore county water, September 24, 1909, Dr. Marshall L. Price	Sept. 24	360	Present	......	Bad
470	No. 1, spring at brick yard, Dr. T. Clyde Routson, Buckeystown	Sept. 25	360	Present	......	Bad
471	No. 2, dry well at brick yard, Dr. T. Clyde Routson, Buckeystown	Sept. 25	300	Absent	Absent	Good
472	No. 3, spring at tenement house, Dr. T. Clyde Routson, Buckeystown	Sept. 25	3,000	Present	......	Bad
473	No. 4, pump near brick yard, Dr. T. Clyde Routson, Buckeystown	Sept. 25	2,400	Present	......	Bad
474	No. 5, Myer's pump, Dr. T. Clyde Routson, Buckeystown	Sept. 25	1,500	Present	Present	Very bad
475	No. 6, pond from which ice is taken, Dr. T. Clyde Routson, Buckeystown	Sept. 25	1,800	Present	......	Bad
476	No. 7, pump of Wm. G. Baker, Dr. T. Clyde Routson, Buckeystown	Sept. 25	240	Absent	Absent	Good
477	No. 8, school-house pump, Dr. T. Clyde Routson, Buckeystown	Sept. 25	300	Absent	Absent	Good
478	Baltimore county water, September 25, 1909, Dr. Marshall L. Price	Sept. 26	24	Absent	Absent	Good
479	Well, Pleasant Talbott, Parkton, A. M. Quick, No. 176	Sept. 27	24	Present	......	Bad
480	Baltimore county water, September 27, 1909, Dr. M. L. Price	Sept. 27	96	Absent	Absent	Good
481	No. 1, spigot, G. P. Tiffany, Dr. L. Gibbons Smart, Lutherville	Sept. 28	10	Absent	Absent	Good
482	No. 2, well, G. P. Tiffany, Dr. L. Gibbons Smart, Lutherville	Sept. 28	36	Present	......	Bad
483	No. 3, well, William Ellsworth, Dr. L. Gibbons Smart, Lutherville	Sept. 28	60	Present	......	Bad
484	No. 1, pump, Dr. T. J. Coonan, Westminster	Sept. 28	Liquefied	Present	......	Bad
485	No. 2, pump, Dr. T. J. Coonan, Westminster	Sept. 28	Liquefied	Present	......	Bad
486	No. 3, pump, Dr. T. J. Coonan, Westminster	Sept. 28	Liquefied	Present	......	Bad
487	Baltimore county water, September 29, 1909, Dr. M. L. Price, State Board of Health	Sept. 29	3	Present	......	Bad
488	No. 1, spigot, kitchen, Tome Institute, Dr. H. L. Rich, Port Deposit	Sept. 29	8	Present	......	Bad
489	No. 3, spigot, Jackson Hall, Dr. H. L. Rich, Port Deposit	Sept. 29	12	Absent	Absent	Good

TABLE NO. 2—Continued.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus, 10 c. c.	1 c. c.	Quality of Water.
490	No. 4, spigot, Memorial Hall, Dr. H. L. Rich, Port Deposit	Sept. 29	8	Absent	Absent	Suspicious †
491	No. 5, spigot, Washington Hall, Dr. H. L. Rich, Port Deposit	Sept. 29	120	......	Present	Bad
492	No. 6, spigot, Carson pharmacy, Dr. H. L. Rich, Port Deposit	Sept. 29	240	......	Present	Bad
493	No. 7, soda fountain, Carson's pharmacy, Dr. H. L. Rich, Port Deposit.	Sept. 29	7,200	Absent	Absent	Suspicious * †
494	No. 8, carbonated water, Carson's pharmacy, Dr. H. L. Rich, Port Deposit	Sept. 29	18	Absent	Absent	Good
495	No. 9, spigot, Junior Building, Dr. H. L. Rich, Port Deposit	Sept. 29	180	Present	......	Bad
496	No. 1, tank in house, E. L. Dinning, 512 Chamber of Commerce	Sept. 29	12	Absent	Absent	Good
497	No. 2, spigot, Mr. Moore's house, E. L. Dinning, 512 Chamber of Commerce, city	Sept. 29	60	Absent	Absent	Suspicious †
498	No. 3, artesian well from pipe, E. L. Dinning, 512 Chamber of Commerce	Sept. 29	720	Present	......	Very bad
499	No. 1, Baltimore Manual Labor School, artesian well, Dr. M. L. Price	Sept. 29	720	Absent	Absent	Suspicious †
500	No. 2, Baltimore Manual Labor School, dug well, Dr. M. L. Price	Sept. 29	480	Present	......	Bad
501	No. 3, Baltimore Manual Labor School, ice pond, Dr. M. L. Price	Sept. 29	180	Present	......	Bad
502	Louis C. Condit, Hilton avenue, Contsville	Sept. 29	10	......	Present	Bad
503	Baltimore county water, Dr. M. L. Price, State Board of Health	Sept. 30	24	Present	......	Bad
504	Well, M. B. Corkran, Lutherville, A. M. Quick, Water Engineer, No. 177.	Sept. 30	12	Absent	Absent	Good
505	Artesian well, W. K. Cromwell, Lake Roland	Sept. 30	20	Present	......	Bad
506	Well of James N. Frederick, Parkton, A. M. Quick, No. 178	Sept. 30	300	Present	......	Bad
507	Baltimore county water, October 1, 1909, Dr. Marshall L. Price	Oct. 1	18	Absent	Absent	Good
508	No. 1, spring, C. O. Remsburg, Dr. George Yourtee, Burkettsville	Oct. 5	Liquefied	Present	......	Bad
509	No. 2, spring, C. O. Remsburg, Dr. George Yourtee, Burkettsville	Oct. 5	Liquefied	Present	......	Bad
510	No. 3, spigot, C. O. Remsburg, Dr. George Yourtee, Burkettsville	Oct. 5	Liquefied	Present	......	Bad
511	No. 4, well, M. L. Horine, Dr. George Yourtee, Burkettsville	Oct. 5	480	Present	......	Bad
512	No. 1, city pump, Know and Coleman streets, Dr. A. Leo Franklin, Cumberland	Oct. 5	48	Absent	Absent	Good
513	No. 2, pump opposite 330 North Center street, Dr. A. Leo Franklin, Cumberland	Oct. 5	10	Absent	Absent	Good
514	No. 3, pump, Pear street, near Madison, Dr. A. Leo Franklin, Cumberland	Oct. 5	30	Present	......	Bad
515	No. 4, private pump, Baltimore avenue and Belview street, Dr. A. Leo Franklin, Cumberland	Oct. 5	1	Absent	Absent	Good
516	No. 1, well of L. W. Dorman, Dr. C. R. Truitt, Salisbury	Oct. 6	3,000	Absent	Absent	Suspicious *
517	No. 2, well of J. C. Goslee, Dr. C. R. Truitt, Salisbury	Oct. 6	18	Absent	Absent	Good
518	No. 3, well of W. S. Taylor, Dr. C. R. Truitt, Salisbury	Oct. 6	1,500	Present	......	Bad
519	No. 4, well of J. W. Wilcox, Dr. C. R. Truitt, Salisbury	Oct. 6	500	Absent	Absent	Good
520	No. 5, open well, Jerome Gordy. Dr. C. R. Truitt, Salisbury	Oct. 6	500	Absent	Absent	Good

521	No. 6, well of Mrs. Calloway, Dr. C. R. Truitt, Salisbury	Oct.	6	Liquefied	Present	Present	Very bad
522	No. 7, spigot, City Water Company, Dr. C. R. Truitt, Salisbury	Oct.	6	18	Absent	Absent	Good
523	Baltimore county water, October 7, 1909, Dr. Marshall L. Price	Oct.	7	30	Absent	Absent	Good
524	No. 1, Dr. F. E. Jameson, Newport	Oct.	7	36	Present	......	Bad
525	Well of Jacob Weddle, Violetsville, Dr. C. W. G. Rohrer	Oct.	8	120	Present	Present	Bad
526	Baltimore county water, October 8, 1909, Dr. Marshall L. Price	Oct.	8	12	Absent	Absent	Good
527	No. 1, spring of T. J. Kolb, Dr. C. H. Diller, Detour	Oct.	8	360	Present	Present	Very bad
528	No. 2, well of Samuel Weybright, Dr. C. H. Diller, Detour	Oct.	8	180	Present	Present	Very bad
529	No. 1, Charles Leffel, Dr. Guy Latimer, Hyattsville	Oct.	8	240	Present	Present	Very bad
530	No. 2, Frank Ainan, Dr. Guy Latimer, Hyattsville	Oct.	8	300	Present	......	Bad
531	No. 3, John Hollingsworth, Dr. Guy Latimer, Hyattsville	Oct.	8	180	Absent	Absent	Good
532	No. 1, well of E. M. Mellor, Dr. D. B. Sprecher, Sykesville	Oct.	9	1,200	Present	Present	Very bad
533	No. 2, well of Clifton Hobbs, Dr. D. B. Sprecher, Sykesville	Oct.	9	720	Present	......	Bad
534	No. 3, W. P. McCardell, Kessler residence, Dr. D. B. Sprecher, Sykesville	Oct.	9	500	Absent	Absent	Good
535	No. 4, W. P. McCardell, Day residence, Dr. D. B. Sprecher, Sykesville	Oct.	9	600	Present	......	Bad
536	No. 5, W. P. McCardell. Dixon residence, Dr. D. B. Sprecher, Sykesville	Oct.	9	480	Present	......	Bad
537	No. 6, W. P. McCardell, spring, Dr. D. B. Sprecher, Sykesville	Oct.	9	120	Absent	Absent	Good
538	No. 7, well of Westley Day, Dr. D. B. Sprecher, Sykesville	Oct.	9	240	Present	......	Bad
539	No 8, well at Methodist Parsonage, Dr. D. B. Sprecher, Sykesville	Oct.	9	480	Present	Present	Very bad
540	No. 9, well of John Westenkemp, Dr. D. B. Sprecher, Sykesville	Oct.	9	300	Present	......	Bad
541	Spigot, W. Duvall, Sudbrook, Dr. H. A. Naylor, Pikesville	Oct.	9	20	Absent	Absent	Good
542	Well, J. L. Johnson, Joppa	Oct.	9	300	Present	......	Bad
543	Spring, E. E. Dick, White Hall, A. M. Quick, No. 179	Oct.	11	300	Present	......	Bad
544	Bored well, Dr. R. C. Bowen, Grantsville	Oct.	11	300	Present	Present	Very bad
545	No. 1, Tuscarora, Dr. J. J. McCurdy, Frederick	Oct.	14	Liquefied	Present	......	Bad
546	No. 2, Spout spring, Dr. J. J. McCurdy, Frederick	Oct.	14	Liquefied	Present	......	Bad
547	No. 3, Stoner's branch, Dr. J. J. McCurdy, Frederick	Oct.	14	Liquefied	Present	......	Bad
548	No. 4, receiver Tuscarora, Dr. J. J. McCurdy, Frederick	Oct.	14	Liquefied	Present	Present	Bad
549	No. 5, Fishing Creek dam, Dr. J. J. McCurdy, Frederick	Oct.	14	Liquefied	Present	......	Bad
550	No. 6, Fishing Creek, Ford, Dr. J. J. McCurdy, Frederick	Oct.	14	1,500	Absent	Absent	Suspicious * ‡
551	No. 7, fountain, North Market street, Dr. J. J. McCurdy, Frederick	Oct.	14	Liquefied	Absent	Absent	Suspicious †
552	No. 8, spigot, Rhorback, Dr. J. J. McCurdy, Frederick	Oct.	14	Liquefied	Present	......	Bad
553	No. 1, spring, Footer's dye works, Dr. C. H. Brace, Cumberland	Oct.	14	300	Present	Present	Bad
554	No. 2, well, Cumberland laundry, Dr. C. H. Brace, Cumberland	Oct.	14	12	Present	Present	Bad
555	No. 3, well, Potomac glass works, Dr. C. H. Brace, Cumberland	Oct.	14	20	Present	Present	Bad
556	No. 4, well, German brewery, Dr. C. H. Brace, Cumberland	Oct.	14	20	Present	Present	Bad
557	No. 5, well, Peerless laundry, Dr. C. H. Brace, Cumberland	Oct.	14	30	Present	......	Bad
538	No. 6, George Creek spring, Dr. C. H. Brace, Cumberland	Oct.	14	1,200	Present	Present	Very bad
559	No. 7, well, Valley street, Dr. C. H. Brace, Cumberland	Oct.	14	3,000	Absent	Absent	Suspicious
560	No. 8, Fisher's pump, Columbia street, Dr. C. H. Brace, Cumberland	Oct.	14	20	Absent	Absent	Good
561	No. 9, pump, Fulton street, Dr. C. H. Brace, Cumberland	Oct.	14	75	......	Present	Bad
562	No. 10, city spigot, Dr. C. H. Brace, Cumberland	Oct.	14	5,000	Present	......	Bad
563	Well No. 1, Dr. A. H. Mann, Jr., Catonsville	Oct.	16	480	Present	......	Bad
564	Well No. 2, Dr. A. H. Mann, Jr., Catonsville	Oct.	16	300	......	Present	Bad
565	Spring No. 3, Dr. A. H. Mann, Jr., Catonsville	Oct.	16	420	Absent	Absent	Suspicious †

TABLE NO. 2—CONTINUED.

	Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus, 10 c. c.	Colon Bacillus, 1 c. c.	Quality of Water.
566	No. 1, school-house well, Dr. C. T. Mason, Clearspring	Oct. 16	720	Present	Present	Bad
567	No. 2, public well, Dr. C. T. Mason, Clearspring	Oct. 16	240	Absent	Absent	Good
568	Well, Dr. I. N. Simpers, Germantown	Oct. 19	900	Present	......	Bad
569	Well of Mrs. Carl, Dr. I. N. Simpers, Germantown	Oct. 19	600	Present	......	Bad
570	Spring, Rev. T. D. Richards, Dr. I. N. Simpers, Germantown	Oct. 19	500	Present	......	Bad
571	Well, G. S. Fox, Dr. C. H. Diller, Detour	Oct. 21	240	Absent	Absent	Good
572	Wel, F. J. Shorb, Dr. C. H. Diller, Detour	Oct. 21	420	Present	Present	Very bad
573	Well, W. C. Miller, Dr. C. H. Diller, Detour	Oct. 21	480	Present	Present	Very bad
574	Well, William Welty, Dr. C. H. Diller, Detour	Oct. 21	400	Present	Present	Very bad
575	Well of George Kelso, Towson, A. M. Quick, No. 180	Oct. 21	5,000	Present	......	Bad
576	Well, A. U. M. P. Church, Towson, A. M. Quick, No. 181	Oct. 21	5,000	Present	Present	Very bad
577	Artesian well, Dr. F. E. Jameson, Newport	Oct. 22	38	Absent	Absent	Good
578	No. 1, cess pool, Van Rentt, Hamilton, Dr. Marshall L. Price	Oct. 25	5,000	Present	Present	Very bad
579	No. 2, mixed sewage taken at outlet, Van Rentt, Dr. Marshall L. Price.	Oct. 25	5,000	Present	Present	Very bad
580	No. 3, cess pool, Van Rentt, Dr. Marshall L. Price	Oct. 25	5,000	Present	......	Bad
581	No. 4, mixed sewage taken at outlet, Van Rentt, Dr. Marshall L. Price.	Oct. 25	5,000	Present	Present	Very bad
582	No. 5, mixed sewage at outlet, Van Rentt, Dr. Marshall L. Price	Oct. 25	5,000	Present	Present	Very bad
583	No. 1, artesian well, W. K. Cromwell, Lake Roland	Oct. 26	600	Absent	Absent	Fair
584	No. 2, reservoir of springs, W. K. Cromwell, Lake Roland	Oct. 26	10	Absent	Absent	Good
585	No. 1, Armstrong ram, Dr. J. E. Pitsnogle, Hagerstown	Oct. 27	120	Present	......	Bad
586	No. 2, Armstrong spring, Dr. J. E. Pitsnogle, Hagerstown	Oct. 27	180	Absent	Absent	Good
587	No. 3, Armstrong upper spring, Dr. J. E. Pitsnogle, Hagerstown	Oct. 27	180	Present	Present	Bad
588	No. 4, Armstrong lower spring. Dr. J. E. Pitsnogle, Hagerstown	Oct. 27	300	Absent	Absent	Good
589	No. 5, spring water from Edgemont, Dr. J. E. Pitsnogle, Hagerstown	Oct. 27	1,500	Absent	Absent	Suspicious * †
590	No. 6, Edgemont Water Company, Dr. J. E. Pitsnogle, Hagerstown	Oct. 27	480	Absent	Absent	Suspicious ‡
591	No. 7, Stouffer spring, Dr. J. E. Pitsnogle, Hagerstown	Oct. 27	1,200	Present	......	Very bad
592	No. 1, well on Walnut alley, Dr. A. Leo Franklin, Cumberland	Oct. 27	3,000	Present	......	Very bad
593	No. 2, Millman's pump, High School supply, Dr. A. Leo Franklin, Cumberland	Oct. 27	12,000	Present	Present	Very bad
594	No. 3, city pump, Baltimore street, Dr. A. Leo Franklin, Cumberland	Oct. 27	60	Absent	Absent	Good
595	Sewage from Ringgold property, Arlington, Dr. Marshall L. Price	Nov. 1	1,800,000	Present	Present	Very bad
596	No. 1, well of A. H. Strausbaugh, Dr. J. H. Stier, Perryman	Nov. 6	300	Absent	Absent	Good
597	No. 2, well No. 1 of Isaac Lee, Dr. J. H. Stier, Perryman	Nov 6	72	Absent	Absent	Good
598	No. 3, well No. 2 of Isaac Lee, Dr. J. H. Stier, Perryman	Nov. 6	240	Absent	Absent	Good
599	No. 4, well of S. A. McGingan, Dr. J. H. Stier, Perryman	Nov. 6	5	Absent	Absent	Good
600	No. 5, well of J. H. Stier, Dr. J. H. Stier, Perryman	Nov. 6	Liquefied	Present	Present	Very bad
601	No. 6, well of W. H. McFadden, Dr. J. H. Stier, Perryman	Nov. 6	18	Absent	Absent	Good
602	No. 7, well of P. W. Johnson, Dr. J. H. Stier, Perryman	Nov. 6	2,400	Present	......	Bad

603	Well, Thomas Cradock, Pikesville	Nov. 6	5	Absent	Absent	Good
604	Spigot, Thomas Cradock, Pikesville	Nov. 6	300	Absent	Absent	Good
605	St. Vincent's Orphan Asylum, Mt. Hope, No. 1, Dr. C. Hampson Jones, City Hall Annex	Nov. 8	360	Absent	Absent	Good
606	St. Vincent's Orphan Asylum, Mt. Hope, No. 2, Dr. C. Hampson Jones, City Hall Annex	Nov. 8	420	Absent	Absent	Good
607	Artesian well, James Bodders, Phoenix, A. M. Quick, Water Engineer, No. 182	Nov. 13	120	Absent	Absent	Good
608	No. 1, well, Mr. Trischnisen, Shell road, near tollgate, Dr. W. E. McClanahan	Nov. 15	2,400	Absent	Absent	Suspicious †
609	No. 2, Mrs. Rose, Shell road and Fifteenth street, Dr. W. E. McClanahan, 620 South Clinton street	Nov. 15	1,800	Absent	Absent	Suspicious *
610	No. 3, Schmittleman, Sixteenth street and First avenue, Dr. W. E. McClanahan, 620 South Clinton street	Nov. 15	2,400	Present	......	Bad
611	Well, Thomas Craddock, Pikesville, A. M. Quick, Water Engineer, No. 183	Nov. 16	75	Present	......	Bad
612	No. 1, well, E. Hayden, T. L. Higdon, Wayside	Nov. 17	480	Absent	Absent	Suspicious ‡
613	No. 2, spring, Eugene Thomas, T. L. Higdon, Wayside	Nov. 17	750	Absent	Absent	Suspicious ‡
614	No. 3, well, T. L. Higdon, Wayside	Nov. 17	480	Absent	Absent	Good
615	E. W. Fiedler, Rossville, Dr. McClanahan	Nov. 18	480	Absent	Absent	Good
616	No. 1, Stouffer spring, Edgemont, Dr. J. E. Pitsnogle, Hagerstown	Nov. 30	300	Absent	Absent	Good
617	No. 2, Loose spring, Edgemont, Dr. J. E. Pitsnogle, Hagerstown	Nov. 30	45	Absent	Absent	Good
618	No. 3, Bachtel spring, Edgemont, Dr. J. E. Pitsnogle, Hagerstown	Nov. 30	210	Present	......	Bad
619	Charles Knopp, Deale P. O., Dr. T. R. W. Wilson, Churchton	Dec. 4	3	Absent	Absent	Good
620	No. 1, public well, corner Emily and Maryland avenues, Dr. A. L. Franklin, Cumberland	Dec. 4	300	Absent	Absent	Good
621	No. 2, private well, corner Park and Williams streets, Dr. A. L. Franklin, Cumberland	Dec. 4	60	Absent	Absent	Suspicious †
622	No. 3, well on Maryland avenue, opposite No. 152, Dr. A. L. Franklin, Cumberland	Dec. 4	10	Absent	Absent	Good
623	No. 4, spring on Maryland avenue, opposite car switch, Dr. A. L. Franklin, Cumberland	Dec. 4	300	Present	Present	Bad
624	No. 5, well, Dr. Owens, Dr. A. L. Franklin, Cumberland	Dec. 4	180	Absent	Absent	Good
625	No. 6, well corner Wineow and B. & O. R. R., Dr. A. L. Franklin, Cumberland	Dec. 4	48	Present	......	Bad
626	No. 7, well corner Howard and Mechanic streets, Dr. A. L. Franklin, Cumberland	Dec. 4	4	Absent	Absent	Good
627	No. 8, well back of Wright's livery stable, Dr. A. L. Franklin, Cumberland	Dec. 4	240	Absent	Absent	Suspicious †
628	No. 1, well, Thomas Craddock, Pikesville	Dec. 9	30	Absent	Absent	Suspicious †
629	No. 2, spigot, Thomas Craddock, Pikesville	Dec. 9	1,500	Absent	Absent	Suspicious *
630	Water from sewerage, Dr. M. L. Price, State Board of Health	Dec. 16	600,000	......	Present	Very bad

TABLE NO. 3—TABULAR REPORT OF MILK EXAMINATIONS, Jan. 1 to Dec. 31, 1909.

No.	FROM	Date	Colonies per c. c.	Pus cells.	Streptococci.	Colon	.Quality.
1	C. S. Rich, 807 Union Trust Building, Dr. M. L. Price, State Board of Health	Jan. 9	3,000	....	....	Absent (1 c.c.)	Good
2	Kimball's farm, Dr. H. L. Rich, Port Deposit	Jan. 11	50,000	....	....	Absent (1 c.c.)	Good
3	Boys' M. T. S. buckets, black tin, Dr. M. L. Price, State Board of Health	Jan. 15	30,000	....	....	Absent (1 c.c.)	Good
4	John Kimball, Dr. H. L. Rich, Port Deposit	Feb. 19	No count	....	....	Absent (1 c.c.)	Good
5	Robert Coxon, Gardenville	Mar. 19	300,000	....	....	Present (1 c.c.)	Bad
6	B. Stump, Emmorton, No. 1	Mar. 29	60,000	.2	40,000	Absent (1 c.c.)	Good
7	B. Stump, Emmorton, No. 2	Mar. 29	40,000	0	0	Absent (1 c.c.)	Good
8	B. Stump, Emmorton, No. 3	Mar. 29	20,000	0	0	Absent (1 c.c.)	Good
9	Mr. Kimberly, Catonsville	Mar. 29	20,000	2.3	10,000,000	Absent (1 c.c.)	Good
10	National Park Seminary, J. W. Rowland, supervisor	Mar. 30	60,000	....	....	Absent (1 c.c.)	Good
11	Dairy C. C. Renn, receiver G. M. Kimberly, Catonsville, Dr. M. L. Price	Apr. 3	360,000	....	....	Absent (1 c.c.)	Good
12	Kimballs farm, Dr. H. L. Rich, Port Deposit	Apr. 6	300,000	....	....	Absent (1 c.c.)	Good
13	Kimballs farm, Dr. H. L. Rich, Port Deposit	May 12	180,000	....	....	Absent (1 c.c.)	Good
14	Dr. Travers, Easton, cow with lump jaw	May 22	600,000	0.3	20,000	Absent	Suspicious
15	R. C. Norris, Orange Grove, Dr. Rohrer, State Board of Health	June 22	300,000	....	....	Present	Bad
16	H. C. McComas, Lake avenue, Lake Roland	July 10	3,600,000	....	....	Present	Bad
17	Dairy No. 1, Dr. H. G. Simpers, Chestertown	July 20	18,000,000	....	....	Absent	Bad*
18	Dairy No. 2, Dr. H. G. Simpers, Chestertown	July 20	300,000	....	....	Absent	Good
19	Morris' dairy, Chestertown	July 30	24,000,000	10.1	Innumerable	Present	Very bad
20	No. 1, milk of separator, Baltimore Manual Labor School	Aug. 6	Liquefied	2.1	5,000,000	Present (1 c.c.)	Bad
21	No. 2, cream from separator, Baltimore Manual Labor School	Aug. 6	Liquefied	.0	5,000,000	Present (1 c.c.)	Bad
22	No. 1, proprietor Simms' dairy, Charles J. Simms	Aug. 7	12,000,000	....	....	Absent	Suspicious*
23	No. 2, Silver Spring farm dairy, J. E. Schrider	Aug. 7	600,000	....	....	Present (1 c.c.)	Bad
24	No. 3, Hight's dairy, sample from wagon	Aug. 7	18,000,000	....	....	Present (1 c.c.)	Bad
25	F. E. Jameson, Newport	Aug. 10	1,200,000	....	....	Absent	Suspicious†
26	Store of M. G. Lewis & Sons, Dr. M. L. Price, State Board of Health	Aug. 11	15,000,000	2.5	200,000	Absent	Suspicious†
27	Store of A. Ringgold, Dr. M. L. Price, State Board of Health	Aug. 11	6,000,000	5.1	5,000,000	Absent	Suspicious†
28	F. Schriner, Dr. J. Watt, Union Bridge	Aug. 23	24,000,000	....	....	Present	Very bad
29	Spring Lake farm dairy, 811 George street, State Board of Health	Aug. 27	Liquefied	....	....	Absent	Susp'cious
30	No. 1, St. Vincent's Asylum, Dr. H. A. Naylor, Pikesville	Aug. 30	1,800,000	....	....	Absent	Bad*
31	No. 2. St. Vincent's Asylum, Mt. Hope	Aug. 30	900,000	....	....	Absent	Fair

32	Oak Grove dairy, Mr. Wilhide, Dr. M. L. Price, State Board of Health	Sept. 1	12,000,000	....	....	Present	Very bad
33	J. G. Wrightson, Dr. J. H. Hope, McDaniels	Sept. 3	0	....	....	Absent	Good
34	Louis Degall, Van Bibber	Sept. 13	2,400,000	....	....	Absent	Bad
35	Wright's dairy, Dr. C. H. Brace, Cumberland	Sept. 14	4,800,000	....	....	Absent	Suspicious*
36	Long's dairy, Dr. C. H. Brace, Cumberland	Sept. 14	3,000,000	....	....	Present	Bad
37	Dr. B. H. Smith, 1007 Madison avenue	Sept. 21	0	....	....	Absent	Good
38	Jacob Weddell, Violetsville, G. A. Schultz, City Hall Annex	Sept. 22	9,000,000	....	....	Absent	Bad*
39	Kimball farm dairy, Dr. H. L. Rich, Port Deposit	Sept. 29	60,000	....	....	Absent	Good
40	Baltimore Manual Labor School, Dr. M. L. Price, State Board of Health	Sept. 29	480,000	....	.	Absent	Good
41	No. 1, Louis de Goll, Dr. M. L. Price	Oct. 6	180,000	....	....	Absent	Good
42	No. 2, Louis de Goll, Dr. M. L. Price	Oct. 6	600,000	20.5	500,000	Absent	Suspicious
43	No. 3, Louis de Goll, Dr. M. L. Price	Oct. 6	360,000	27.3	100,000	Absent	Bad
44	Dr. F. E. Jameson, Newport	Oct. 7	600,000	....	....	Present	Bad
45	Jacob Weddell, Violetsville, Dr. C. W. G. Rohrer	Oct. 8	600,000	....	....	Absent	Suspicious
46	No. 22, H. E. McDade, H. L. Stallings	Oct. 12	7,200,000	20.2	500,000	Present	Bad
47	No. 23, J. D. Bragman, H. L. Stallings	Oct. 12	6,000,000	3.1	800,000	Present	Bad
48	No. 24, Roger E. Simmons, H. L. Stallings	Oct. 12	2,400,000	22.0	1,500,000	Absent	Suspicious*
49	No. 26, Mangansville dairy, H. L. Stallings	Oct. 12	6,000,000	7.3	100,000	Present	Bad
50	No. 27, Mansion farm dairy, H. L. Stallings	Oct. 12	1,800,000	2.1	1,000,000	Present	Bad
51	No. 28, Ravenwood dairy, H. L. Stallings	Oct. 12	6,000,000	2.5	2,000,000	Present	Bad
52	No. 29, Glenwood bottle dairy, H. L. Stallings	Oct. 12	12,000,000	3.3	2,500,000	Present	Bad
53	No. 30, People's dairy, H. L. Stallings	Oct. 12	2,000,000	5.1	1,500,000	Present	Bad
54	No. 31, Acme dairy, H. L. Stallings	Oct. 12	36,000,000	3.2	5,000,000	Present	Bad
55	No. 32, Standard dairy, H. L. Stallings	Oct. 12	1,200,000	21.1	500,000	Present	Bad
56	No. 33, Huyett's grocery, H. L. Stallings	Oct. 12	600,000	25.6	500,000	Absent	Bad
57	No. 34, Dr. Pitsnogle, H. L. Stallings	Oct. 12	600,000	12.2	50,000	Present	Bad
58	No. 35, wagon driven by Reno Wolf, H. L. Stallings	Oct. 12	2,400,000	1.2	100,000	Absent	Suspicious*
59	No. 42, Wm. H. Kendall's dairy, H. L. Stallings	Oct. 12	6,000,000	5.1	Innumerable	Present	Bad
60	No. 43, Green Lawn dairy, H. L. Stallings	Oct. 12	6,000,000	27.8	500,000	Present	Very bad
61	No. 44, Cearfoss dairy, H. L. Stallings	Oct. 12	3,000,000	2.1	2,000,000	Absent	Bad*
62	No. 45, City dairy, H. L. Stallings	Oct. 12	3,000,000	3.4	1,000,000	Present	Bad
63	No. 46, N. E. Schindel's dairy, H. L. Stallings	Oct. 12	1,200,000	8.7	1,000,000	Absent	Suspicious*
64	No. 48, Simon Baker's wagon, H. L. Stallings	Oct. 12	1,000,000	10.2	500,000	Absent	Suspicious*
65	No. 49, H. L. Stallings	Oct. 12	9,000,000	3.2	100,000	Absent	Suspicious*
66	No. 50, Hygiene bottle dairy, H. L. Stallings	Oct. 12	1,200,000	3.4	Innumerable	Present	Bad
67	No. 51, Hillside dairy, H. L. Stallings	Oct. 12	1,200,000	7.0	1,000,000	Absent	Suspicious
68	No. 53, Cedar Lawn dairy, H. L. Stallings	Oct. 12	2,400,000	3.1	2,000,000	Absent	Suspicious*
69	No. 54, Lockwillow dairy, H. L. Stallings	Oct. 12	24,000,000	3.5	2,500,000	Present	Bad
70	No. 55, Cherry Dale dairy, H. L. Stallings	Oct. 12	3,000,000	2.1	2,000,000	Absent	Suspicious*
71	Milk from cow No. 1, Dr. F. E. Jameson, Newport	Oct. 22	900,000	5.2	500,000	Absent	Fair
72	Milk from cow No. 2, Dr. F. E. Jameson, Newport	Oct. 22	300,000	20.2	200,000	Absent	Fair
73	No. 3, Thomas E. Jackson, Dr. F. E. Jameson, Newport	Oct. 22	240,000	10.5	200,000	Absent	Good
74	Louis E. Purnell Sixth street, Brooklyn, Anne Arundel Co.	Oct. 26	Not made	24.8	100,000	....	Bad
75	J. H. Cromwell, Roland Park	Dec. 26	360,000	....	....	Absent (1 c.c.)	Good

Special Examinations.

The following special examinations have been made during the past year. A local outbreak of typhoid fever upon a farm was investigated, and the typhoid bacillus was isolated from the stool of a young colored man who was handling the food and waiting upon the table. This was atypical so-called "carrier" case, and when the "carrier" was taken away from his special duties and allowed to do other farm work that did not involve the immediate handling of food, no further cases of typhoid fever occurred.

Several specimens of disinfectants have also been examined, and a special investigaton was made concerning an outbreak of chicken cholera upon a farm in Baltimore county. We have also investigated an interesting outbreak of typhoid fever which occurred in one of the counties of Southern Maryland, and the result is described in the following quotation from Volume 6 of the "Archives of Internal Medicine," pages 121 to 138.

"This outbreak occurred in a boarding school, in which there were also day scholars. We were unable to obtain any exact data concerning this outbreak, but were simply informed that it was entirely confined to the boarders, and that none of the day scholars developed typhoid fever. On further inquiry we learned that the boarders drank water from a tank supplied by a certain well. None of the day pupils drank this water. We obtained a sample of the water from the tank and centrifugalized 50 c. c. We inoculated the sediment into lactose bile, medium, and obtained perfectly typical colonies of the typhoid bacillus on the modified Hesse's medium. This organism was typical in all respects on culture material, and agglutinated by an immune serum at a dilution of 1 to 500. This same immune serum would only agglutinate our stock typhoid at a dilution of 1 to 1,000. The organism also agglutinated with a number of positive typhoid bloods, and on immunizing a rabbit with the organism the rabbit serum agglutinated typical strains of the typhoid bacillus at a dilution of 1 to 1,000. As a final test we found that the serum was opsonic for the typhoid bacillus at a dilution of 1 to 25, and the organism also produced fatal peritonitis in guinea-pigs in doses corresponding to the washings from a two-inch blood-serum slant."

Respectfully submitted,

Wm. Royal Stokes,

Chief Bureau of Bacteriology.

CHEMIST'S REPORT.

Baltimore, May 22, 1911.

Dr. Marshall L. Price,
Secretary State Board of Health, Baltimore, Md.

Dear Sir: During the fiscal year beginning January 13th, 1909, and ending January 12th, 1910, the Chemical Department has reported the following analyses:

255 samples of Water.
81 samples of Milk.
1 sample of Cough Drops.
1 sample of Candy.
2 samples of Witch Hazel.
1 sample of Gall Stones.
2 samples of Factory Waste.
6 samples of Discharge from Creamery.
1 sample of Disinfectant Fluid.
1 sample of Table Syrup.
1 sample of Preserves.
2 samples of Catsup.
2 samples of Olive Oil.
1 sample of Salad Oil.
5 samples of Canned Vegetables.
6 samples of Medicine.
6 samples of Sewage.
8 samples of Paper Napkins.
10 samples of Spices.
1 sample of Vanilla.
14 samples of Vinegar.
19 samples of Butter.
18 samples of Oleomargarine.
Report upon efficiency of Pyroformol.

Total.....444 analyses.

During the fiscal year the work has been considerably broadened, in anticipation of the passage of a Pure Food and Drug Act, and also in anticipation of the Board taking a more authoritative position in regard to the disposal of waste from factories, etc.

At the time of this writing these anticipations have been realized, and this preliminary work has been found to be a considerable service.

Very truly yours,

W. B. D. Penniman,

Chief, Bureau of Chemistry.

INSPECTOR'S REPORT.

JANUARY, 1909.

CONDEMNED AND TANKED—FEBRUARY, 1909.

Place.	Hogs.	Cattle.	Sheep.
Union Stock Yards	..	2	3
Baltimore Butchers' Abattoir	..	1	..
Frederick Road, 200 pounds beef (spoiled)	..	..	..
No. 70 Garrison Lane	..	1	..
Philadelphia Road	..	1	..
Total	..	5	3

Disease.			
Lump-Jaw	..	1	..
Unwholesome	..	..	..
Tuberculosis	..	3	..
Bruised	..	1	3
Total	..	5	3

Total number of condemnations, 8.

Respectfully submitted,

CHARLES N. MITTEN, *Inspector.*

CONDEMNED AND TANKED—MARCH, 1909.

Place.	Hogs.	Cattle.	Sheep.
Union Stock Yards	..	4	5
Pennsylvania Avenue	3	7	1
Baltimore Butchers' Abattoir	..	3	2
Garrison Lane	2	..	..
Highlandtown	..	1	..
Fulton Station	..	2	..
Not stated	..	2	..
Total	5	19	8

Disease.			
Unwholesome	..	13	7
Cholera	5	..	..
Tuberculosis	..	4	1
Lump-Jaw	..	2	..
Total	5	19	8

Also 300 pounds of spoiled beef on Frederick avenue.

Total number of condemnations, 32.

Respectfully submitted,

CHARLES N. MITTEN, *Inspector.*

CONDEMNED AND TANKED—APRIL, 1909.

Place.	Hogs.	Cattle.	Sheep.
Baltimore Butchers' Abattoir	..	6	..
Union Stock Yards	..	1	7
Brown's Lane	..	12	..
Union Abattoir	2	..	..
Jenkins' Lane	..	3	..
Frederick Road	..	1	..
Frederick Avenue	..	4	..
Pennsylvania Avenue	..	5	..
Garrison Lane	3	..	..
Total	5	32	7

Disease.	Hogs.	Cattle.	Sheep.
Unwholesome	2	10	7
Tuberculosis	..	22	..
Cholera	3	..	..
Total	5	32	7

Respectfully submitted,

CHARLES N. MITTEN, *Inspector.*

CONDEMNED AND TANKED—MAY, 1909.

Place.	Hogs.	Cattle.	Sheep.
Frederick Road	..	2	..
Union Stock Yards	..	2	..
Highlandtown	..	1	..
Total	..	5	..

Disease.	Hogs.	Cattle.	Sheep.
Tuberculosis	..	3	..
Under Weight	..	2	..
Total	..	5	..

Also condemned and tanked, 10,700 pounds of hams, shoulders, bacon, corned-beef, etc., at 2806 Pennsylvania avenue.

Total of condemnations, 5.

Respectfully submitted,

CHARLES N. MITTEN, *Inspector.*

CONDEMNED AND TANKED—JUNE, 1909.

Place.	Hogs.	Cattle.	Sheep.
Union Stock Yards	..	1	6
Baltimore Butchers' Abattoir	..	5	..
Pennsylvania Avenue Abattoir	..	..	1
Brown's Lane	..	8	..
Garrison Lane	2	..	..
Total	2	14	7

Disease.			
Tuberculosis	..	9	..
Cholera	2	..	..
Unwholesome	..	5	7
Total	2	14	7

Total number of condemnations, 23.

Respectfully submitted,

Charles N. Mitten, *Inspector.*

INSPECTOR'S REPORT FOR JULY, 1909.

Summary, June 2 to July 12, Inclusive.

Disease.	Hogs.	Cattle.	Sheep.
Tuberculosis	..	9	..
Unwholesome	1	6	6
Cholera	2	..	..
Lump-Jaw	..	1	..
Total	3	16	6

Place.			
Brown's Lane	..	7	..
Pennsylvania Avenue	..	5	..
Union Stock Yards	..	2	6
Garrison Lane	3	..	..
Frederick Avenue	..	2	..
Total	3	16	6

Respectfully submitted,

Charles N. Mitten, *Inspector*

CONDEMNED AND TANKED—AUGUST, 1909.

Place.	Hogs.	Cattle.	Sheep.
Brown's Lane	..	8	..
Fulton Station	..	3	..
Pennsylvania Avenue	..	3	..
Union Stock Yards	..	2	3
Garrison Lane	2	..	..
Frederick Avenue	..	1	..
Baltimore Butchers' Abattoir	..	1	..
Marriott Street	2	..	..
Total	4	18	3

Disease.			
Tuberculosis	..	8	..
Unwholesome	..	10	3
Cholera	4	..	..
Total	4	18	3

Total number of condemnations, 25.

Respectfully submitted,

Charles N. Mitten, *Inspector.*

CONDEMNED AND TANKED—SEPTEMBER, 1909.

Place.	Hogs.	Cattle.	Sheep.
Brown's Lane	..	5	..
Pennsylvania Avenue	..	..	2
Baltimore Butchers' Abattoir	..	5	2
Union Stock Yards	..	3	5
Garrison Lane	3	..	..
Total	3	13	9

Disease.	Hogs.	Cattle.	Sheep.
Tuberculosis	..	7	..
Unwholesome	..	4	9
Lump-Jaw	..	2	..
Cholera	3	..	..
Total	3	13	9

Total number of condemnations, 25.

Respectfully submitted,

CHARLES N. MITTEN, *Inspector.*

CONDEMNED AND TANKED—OCTOBER, 1909.

Place.	Hogs.	Cattle.	Sheep.
Brown's Lane	..	9	..
Pennsylvania Avenue	..	2	3
Union Stock Yards	..	1	10
Union Abattoir	1	..	7
Garrison Lane	2	..	..
Baltimore Butchers' Abattoir	..	1	..
Total	3	13	20

Disease.	Hogs.	Cattle.	Sheep.
Tuberculosis	..	9	..
Unwholesome	1	4	20
Cholera	2	..	..
Total	3	13	20

Total number of condemnations, 36.

Respectfully submitted,

CHARLES N. MITTEN, *Inspector.*

CONDEMNED AND TANKED—NOVEMBER, 1909.

Place.	Hogs.	Cattle.	Sheep.
Union Stock Yards	..	3	4
Baltimore Butchers' Abattoir	..	4	..
Brown's Lane	..	13	..
Garrison Lane	2	..	..
Pennsylvania Avenue	..	1	..
Stinson Street	1	..	..
Pennsylvania Railroad Pens	..	..	5
Jenkins' Lane	..	1	..
B. and O. Pens	..	..	3
Total	3	22	12

Disease.			
Tuberculosis	..	14	..
Unwholesome	..	7	12
Lump-Jaw	..	1	..
Cholera	3	..	..
Total	3	22	12

Total number of condemnations, 37.

Respectfully submitted,

CHARLES N. MITTEN, *Inspector.*

CONDEMNED AND TANKED—DECEMBER, 1909.

Place.	Hogs.	Cattle.	Sheep.
Baltimore and Ohio Pens	..	..	4
Baltimore Butchers' Abattoir	..	4	1
Union Stock Yards	..	2	9
Brown's Lane	..	10	..
Garrison Lane	2	..	..
Frederick Avenue	..	1	..
Total	2	17	14

Disease.			
Unwholesome	..	6	14
Tuberculosis	..	11	..
Cholera	2	..	..
Total	2	17	14

Total number of condemnations, 33.

Respectfully submitted,

CHARLES N. MITTEN, *Inspector.*

TOTAL CONDEMNATIONS, 1909.

Disease.	Hogs.	Cattle.	Sheep.
Unwholesome	7	65	85
Lump-Jaw	..	8	..
Tuberculosis	..	100	1
Under Weight	..	4	..
Bruised	13	1	3
Cholera	13	..	..
Total	33	178	89

Total number of condemnations, 300.

Place.			
Union Abattoir	3	1	7
Marion Street	2	..	..
Union Stock Yards	3	25	58
Fulton Station	..	7	..
Baltimore Butchers' Abattoir	..	30	5
Garrison Lane	21	..	..
Philadelphia Road	..	1	..
Pennsylvania Avenue	3	23	7
Stinson Street	1	..	..
Highlandtown	..	2	..
Brown's Lane	..	72	..
Jenkins' Lane	..	4	..
Frederick Road	..	3	..
Frederick Avenue	..	8	..
Pennsylvania Railroad Pens	..	..	5
Baltimore and Ohio Pens	..	..	7
Not stated	..	2	..
Total	33	178	89

Total number of condemnations, 300.

PARTIAL CONDEMNATIONS DURING 1909.

Parts.	Places.	Disease.
120 pounds beef	Frederick Road	Tuberculosis
200 pounds beef	Frederick Road	Tainted
300 pounds beef	Frederick Avenue	Tainted
10,700 pounds hams, shoulders, bacon, corned beef	280 Penna. Ave	Tainted

Respectfully submitted,

Charles N. Mitten, *Inspector.*

CLERICAL REPORT.

1909.

Number of letters written	8,487
Multigraphed sheets	56,820
Number of second-class packages	459
Number of birth certificates filed	10,242
Number of death certificates filed	8,970

Distribution of Prophylactic Supplies to Tuberculous Patients.

Supplies issued in crates to local Health Officers—number of packages	836
Supplies issued from the office of the State Board of Health—number of packages	999
Supplies issued in bulk (not in packages) to Instructive Visiting Nurses' Association, Bayview Tuberculosis Hospital, Phipps' Dispensary, etc.—number of patients supplied	2,470

Sent vouchers to 53 local registrars for the registration of births and deaths for the quarters ended December 31, 1908; March 31, 1909; June 30, 1909; September 30, 1909.

Respectfully submitted,

M. L. Rullman, Chief Clerk.

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VITAL STATISTICS.

TABLE A.

DEATHS IN MARYLAND, 1909, BY AGE, SEX, COLOR, MONTH AND CAUSE—RURAL DISTRICTS.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Male.	Female.	White.	Colored.	Total.	Causes of Death.	0 to 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and Over.	Unknown.
11	10	10	5	10	10	35	56	55	44	36	22	149	155	214	90	304	1. Typhoid Fever (3)	1	8	6	6	5	24	30	44	51	33	23	21	12	10	8	7	8	5	1	...	...	1
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	2. Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	3	3	1	2	2	1	1	3	2	3	1	12	10	13	9	22	3. Fever, recurrent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	4. Fever, Intermittent and Malarial Cachexia (15)	4	...	1	1	...	1	...	2	1	1	2	1	...	1	...	1	...	...	3	2	1	...
13	11	12	14	6	6	1	2	1	3	...	5	38	36	53	21	74	5. Variola	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	4	1	5	2	...	...	2	2	1	1	6	16	9	23	2	25	6. Measles (2)	21	14	14	4	5	7	4	2	...	1	...	1	...	1	...	...	...	...	...	...	...	...
7	4	9	8	13	11	12	15	15	10	5	14	60	63	63	60	123	7. Scarlatina (2)	...	2	1	2	5	8	2	1	2	...	2	...	...	...	...	...	...	...	...	...	...	...
13	5	13	5	5	2	3	4	6	8	12	7	42	41	69	14	83	8. Whooping Cough (2)	69	24	11	7	3	5	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
20	18	49	43	21	7	4	2	4	...	8	10	97	89	133	53	186	9. Diphtheria and Croup (2)	15	5	15	14	8	18	3	1	1	...	1	...	...	...	...	1	...	...	1	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	10. Grippe (1)	13	7	3	4	1	3	5	5	6	4	8	3	5	5	3	8	11	21	25	20	24	2
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	11. Miliary Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
..	...	...	...	...	...	2	1	1	...	...	...	2	2	4	...	4	12. Cholera, Asiatic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	1	2	...	5	20	17	7	5	1	1	32	29	46	15	61	13. Ceolera, Nostras (3)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	14. Dysentery (3)	11	6	...	1	...	1	2	1	...	1	2	1	1	1	1	2	6	6	5	4	9	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	15. Pest (Plague)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	16. Yellow Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	1	3	2	1	3	2	1	1	2	4	1	8	14	22	...	22	17. Leprosy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	2	1	...	...	...	...	...	...	...	...	1	2	3	...	3	18. Erysipelas (8)	7	...	...	1	...	1	...	1	...	...	1	1	1	2	...	...	3	...	1	1	2	...
1	2	...	1	3	1	1	...	...	1	3	2	9	6	13	2	15	19. Other Epidemic Affections	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	20. Purulent Infection and Septicæmia (7)	3	...	...	...	...	...	1	...	...	2	2	1	...	2	...	1	...	1	1	...	1	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	21. Glanders and Farcy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	1	22. Malignant Pustule and Charbon (Anthrax)	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	23. Rabies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	24. Actinomycosis, Trichinosis, etc.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	1	25. Pellagra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
1	...	2	1	2	2	...	2	1	1	...	...	8	4	8	4	12	26. Tubercle of Larynx (1)	1	...	...	...	...	...	...	...	2	3	2	2	...	...	1	1	...	...	...	...	...	...
95	97	117	114	99	81	106	69	53	66	88	92	490	587	635	442	1077	27. Tubercle of Lungs (1)	17	8	4	4	3	19	42	116	181	143	128	81	64	71	59	39	40	21	19	6	8	4
4	3	2	2	3	3	1	4	4	...	4	5	20	15	21	14	35	28. Tubercle of Meninges (6)	5	8	5	1	1	5	...	2	2	...	1	...	...	3	1	...	...	...	...	...	...	1
1	3	3	4	4	2	6	4	6	3	2	2	18	22	20	20	40	29. Tubercle, Abdominal (3)	7	1	1	4	...	1	1	4	4	2	1	2	3	2	1	...	1	2	2	...	1	...
1	...	1	...	...	1	1	...	1	...	2	...	4	3	6	1	7	30. Pott's Disease (14)	...	...	...	...	...	...	...	1	1	...	1	1	...	1	...	...	1	1	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	31. Abscess, Cold	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	1	32. White Tumor (White Swelling)	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	2	...	2	...	1	...	2	1	1	3	...	8	5	8	5	13	33. Tubercle of other Organs	1	1	1	...	...	...	1	1	1	1	1	1	...	1	...	1	...	2	...	...	...	...
..	1	1	1	...	1	...	...	1	2	1	1	6	3	6	3	9	34. Generalized Tubercle (7)	...	...	...	...	...	...	...	3	1	2	1	...	...	1	...	...	1	...	...	...	...	...
..	...	...	1	...	...	1	...	...	...	...	1	3	..	1	2	3	35. Scrofula (9)	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	2	3	3	4	3	3	1	...	3	3	1	17	14	11	20	31	36. Syphilis (7)	13	4	...	...	...	...	...	1	1	2	2	2	2	...	2	1	...	...	...	1	...	...
..	1	...	...	...	...	...	...	...	2	1	...	2	2	4	...	4	37. Blennorrhagia of the Adult	1	...	...	...	...	...	...	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...
1	...	...	1	...	...	...	...	...	...	...	...	1	1	...	2	2	38. Gonococcic Infections of Children	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	2	...	...	...	1	...	...	2	2	2	2	8	3	10	1	11	39. Cancer and other Malignant Tumors of the Buccal Cavity	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	1	4	...	...	3	...
9	10	6	19	9	11	15	10	10	14	10	9	70	62	114	18	132	40. Cancer and other Malignant Tumors of the Stomach and Liver	...	...	...	...	...	...	...	...	...	1	...	3	3	12	15	18	20	25	21	9	4	1
2	1	...	2	4	4	2	4	5	4	2	1	12	19	29	2	31	41. Cancer and other Malignant Tumors of the Peritoneum, Intestines and Rectum	..	...	...	...	...	...	...	...	1	...	...	5	...	3	4	1	3	5	4	4	1	...
3	4	5	10	10	3	6	4	2	4	3	10	...	64	49	15	64	42. Cancer and other Malignant Tumors of the Female Genitals	..	...	...	...	...	...	1	...	...	1	2	2	10	9	6	11	6	5	4	4	3	...
5	3	8	4	4	3	2	2	6	3	8	5	1	52	49	4	53	43. Cancer and other Malignant Tumors of the Breast	...	...	...	...	...	...	...	...	...	...	1	2	4	5	11	4	6	10	2	2	4	2

TABLE A—*Continued.*

DEATHS IN MARYLAND, 1909, BY AGE, SEX, COLOR, MONTH AND CAUSE—RURAL DISTRICTS.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Male.	Female.	White.	Colored.	Total.	CAUSES OF DEATH.	0 to 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and Over.	Unknown.
3	...	6	1	1	4	2	3	2	3	...	2	16	11	27	...	27	44. Cancer and other Malignant Tumors of the Skin	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1	3	2	8	2	4	3	1
5	2	4	5	1	4	1	3	3	3	3	4	19	19	32	6	38	45. Cancer and other Malignant Tumors of the other Organs	...	...	...	1	...	1	1	...	...	1	1	...	...	5	3	5	4	6	4	3	3	...
..	1	1	1	2	...	...	...	1	...	...	...	1	5	4	2	6	46. Other Tumors (Tumors of the Female Genitals excepted)	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	2	1	...	...	...	...
5	3	4	5	4	5	1	1	1	6	4	2	21	20	29	12	41	47. Rheumatism, Acute Articular (10)	...	...	...	...	...	3	2	4	...	...	1	3	3	4	4	2	2	4	7	1	1	...
1	1	1	3	2	2	1	...	...	1	1	...	8	5	11	2	13	48. Rheumatism, Chronic, and Gout (11)	...	...	...	...	...	2	...	...	...	...	2	3	1	...	...	...	2	1	2	...	...	...
..	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1	49. Scorbutus	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
1	4	6	5	9	7	6	6	1	5	2	4	20	36	52	4	56	50. Diabetes	...	...	...	1	...	1	2	3	1	...	1	2	1	6	5	7	5	8	8	3	2	...
..	1	...	...	...	1	...	...	...	...	...	...	...	2	2	...	2	51. Goiter, Exopthalmic	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
..	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	1	52. Addison's Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
1	1	1	1	1	...	...	...	...	...	1	2	3	5	7	1	8	53. Leukemia	...	1	...	...	...	1	...	...	...	1	1	...	...	...	...	...	1	2	1	...	...	...
2	2	2	...	2	1	2	1	1	2	...	...	7	8	13	2	15	54. Anemia, Chlorosis	2	1	...	...	...	...	1	1	1	1	1	2	1	1	1	...	1	...	1	...	...	...
..	...	...	...	...	...	2	3	1	1	...	...	5	2	6	1	7	55. Other General Diseases	4	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...
3	1	...	5	3	3	2	3	5	5	3	8	43	1	39	5	44	56. Alcoholism	...	...	...	...	...	1	...	...	...	1	2	6	4	9	7	3	6	...	3	1	...	1
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	57. Saturnism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	58. Other Professional Intoxications	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	1	1	...	...	...	1	2	...	1	3	4	6	1	7	59. Other Chronic Poisonings	...	...	...	...	...	...	...	...	1	...	1	1	...	...	1	1	...	1	...	...	...	1
..	1	1	...	2	1	1	...	...	...	1	...	3	4	6	1	7	60. Encephalitis (6)	1	1	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...	...
8	8	12	11	7	9	11	10	12	3	7	6	63	41	78	26	104	61. Meningitis, Simple (6)	30	10	9	8	6	10	6	3	3	3	3	5	2	1	1	...	...	1	1	1	...	1
..	1	...	...	...	...	...	2	...	...	...	...	2	1	1	2	3	61*a*. Meningitis, Epidemic, Cerebro-Spinal (6)	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
..	1	1	...	2	2	1	1	1	1	2	2	12	2	12	2	14	62. Locomotor Ataxia	...	...	...	...	...	...	...	1	1	...	1	1	2	...	...	2	3	1	1	...	1	...
2	3	2	1	3	1	1	3	2	1	4	3	22	4	18	8	26	63. Other Diseases of the Spinal Cord	4	2	1	...	...	...	...	2	...	1	...	...	...	1	3	1	2	...	7	2	...	...
38	47	51	38	35	36	34	31	34	45	29	48	258	208	359	107	466	64. Cerebral Congestion and Hemorrhage	7	1	...	...	...	...	1	2	...	6	6	3	13	17	29	42	57	73	76	62	67	4
..	2	3	2	...	2	5	...	2	2	2	1	12	9	20	1	21	65. Cerebral Softening	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	9	9	...
28	33	25	29	25	31	27	18	12	21	22	15	157	129	233	53	86	66. Paralysis, without Specified Cause	2	1	...	...	...	...	...	1	...	...	3	3	1	4	17	22	23	49	57	43	60	...
2	1	4	1	1	3	2	5	6	4	...	4	19	14	25	8	33	67. Paralysis, General	...	...	...	...	...	...	...	...	...	...	4	1	4	1	2	5	2	2	6	5	1	...
5	2	5	2	2	3	2	...	...	1	4	6	11	21	24	8	32	68. Other Forms of Mental Alienation	...	...	...	...	...	...	...	1	2	3	2	2	2	1	3	1	4	6	2	...	3	...
3	2	2	4	2	2	...	7	1	3	2	2	19	11	23	7	30	69. Epilepsy	...	...	...	...	...	...	1	2	5	2	3	3	2	1	2	4	2	1	2	...	...	...
1	...	1	1	1	2	...	1	1	1	...	...	6	3	8	1	9	70. Eclampsia (nonpuerperal)	1	...	...	...	...	...	...	...	...	...	3	2	...	1	...	1	...	1	...	...	...	...
7	6	11	10	7	11	8	12	13	8	9	8	58	52	63	47	110	71. Convulsions of Children	96	7	4	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	1	...	7	...	5	7	2	2	1	2	...	18	11	21	8	29	72. Tetanus (6)	14	...	...	...	...	3	2	3	1	3	1	...	...	1	...	...	1	1	...	...	...	...
..	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	1	73 Chorea (6)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
1	2	2	2	3	2	5	4	3	4	1	...	11	18	23	6	29	74. Other Diseases of the Nervous System	6	...	1	1	1	1	...	1	...	1	1	1	...	2	1	2	4	1	3	2	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	75. Diseases of the Eye and its Adnexa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	1	1	...	...	...	...	1	...	...	...	...	2	1	3	...	3	76. Diseases of the Ear	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	1	...	...	1	...	...	1	...	...	1	1	5	1	4	2	6	77. Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	1	...	1	...
2	...	3	3	3	...	1	1	1	...	1	5	8	12	17	3	20	78. Endocarditis, Acute	2	...	...	...	...	...	1	...	2	2	...	1	1	1	1	1	...	2	1	3	2	...
68	55	67	47	61	53	49	35	47	56	50	49	329	308	481	156	637	79. Organic Diseases of the Heart	7	...	...	...	...	5	3	7	11	11	14	10	28	36	46	53	67	85	98	82	69	5
2	...	3	1	1	2	2	2	1	1	4	1	12	8	17	3	20	80. Angina Pectoris	1	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	2	6	4	4	...	...
6	5	5	4	6	7	4	3	6	4	4	5	37	22	49	10	59	81. Affections of the Arteries (Atheroma, Aneurism, etc.)	...	...	...	...	...	...	...	1	1	...	1	...	...	1	2	...	11	7	9	01	16	...
..	1	...	1	2	1	2	...	...	...	2	...	5	4	8	1	9	82 Embolus and Thrombosis	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	1	...	3	...	...	2	...
1	...	1	...	...	...	...	...	...	1	...	...	1	2	2	1	3	83. Affections of the Veins	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	84. Affections of the Lymphatic System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	1	1	...	...	1	1	1	...	2	1	1	9	3	11	1	12	85. Hemorrhages	6	1	...	...	...	1	...	...	1	...	...	2	...	...	...	...	...	...	1	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	86. Other Affections of the Circulatory System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	1	1	2	...	2	...	...	...	...	...	...	1	5	...	6	6	87. Diseases of the Nasal Fossæ	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	1	1	1	...	2	...	1	1	3	1	1	7	5	11	1	12	88. Affections of the Larynx	3	1	2	2	...	...	1	...	...	...	1	...	...	1	...	...	...	...	...	1	...	...
..	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	1	89. Affections of the Thyroid Body	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
17	22	18	20	5	3	6	3	2	4	3	12	56	59	71	44	115	90. Bronchitis, Acute (1)	57	10	1	1	2	3	...	...	1	...	...	1	...	...	1	1	1	1	16	6	13	...

TABLE A—*Continued.*

DEATHS IN MARYLAND, 1909, BY AGE, SEX, COLOR, MONTH AND CAUSE—RURAL DISTRICTS.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Male.	Female.	White.	Colored.	Total.	Causes of Death.	0 to 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and Over.	Unknown.
4	6	6	5	6	...	...	1	1	1	2	7	15	24	30	9	39	91. Bronchitis, Chronic (1)	3	2	1	1	...	...	...	...	...	...	...	...	2	3	1	2	2	7	6	3	6	...
35	30	28	22	17	4	5	5	6	9	15	18	99	95	132	62	194	92. Broncho-Pneumonia (1)	98	26	20	3	3	5	1	1	1	...	2	...	1	1	...	4	5	5	5	5	8	...
80	80	88	90	40	17	9	15	13	18	37	61	305	243	398	150	548	93. Pneumonia (1)	154	37	19	10	6	23	7	17	14	7	17	17	11	12	17	23	30	39	32	23	33	...
1	3	...	1	1	3	1	2	...	...	...	3	7	8	12	3	15	94. Pleurisy (1)	1	1	...	...	1	1	...	...	...	...	...	1	...	1	...	1	2	1	1	2	2	...
5	4	6	3	5	3	2	...	3	3	4	5	20	23	36	7	43	95. Pulmonary Congestion and Apoplexy (1)	15	2	1	...	...	1	...	...	...	...	...	1	1	1	...	1	...	3	4	4	9	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	96. Gangrene of the Lung	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	1	4	...	...	...	3	...	1	3	2	1	11	5	12	4	16	97. Asthma	1	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	2	3	2	3	...	...
...	...	...	...	...	...	...	...	...	2	...	...	1	1	1	1	2	98. Pulmonary Emphysema	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...
2	...	3	...	...	1	2	...	1	...	4	1	4	10	9	5	14	99. Other Diseases of the Respiratory Apparatus	...	...	...	...	...	...	1	...	1	1	1	1	...	1	1	2	3	...	1	1	...	...
...	...	...	...	...	2	4	2	1	...	1	...	5	5	3	7	10	100. Affections of the Mouth and its Adnexa (3)	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	4	1	...	1	2	4	...	3	...	3	6	13	11	8	19	101. Affections of the Pharynx (3)	7	2	1	2	...	1	2	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	1	102. Affections of the Œsophagus (3)	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	2	1	...	2	1	1	1	...	1	1	1	9	3	11	1	12	103. Ulcer of the Stomach (3)	...	...	...	...	...	1	...	...	1	...	...	...	1	2	...	...	3	2	1	1	...	...
17	10	10	17	12	18	20	20	23	22	17	15	89	112	151	50	201	104. Other Affections of the Stomach (Cancer excepted) (3)	56	7	2	2	2	3	...	...	2	4	4	8	7	2	7	14	14	20	22	13	12	...
9	4	4	5	14	101	204	182	74	38	12	12	343	316	498	161	659	105. Diarrhœa and Enteritis (under 2 years) (3)	538	106	7	2	...	4	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	2	2	...	...	...	...	1	3	4	...	4	105*a*. Diarrhœa and Enteritis, Chronic (3)	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
5	1	3	5	6	7	16	19	7	12	9	6	48	48	75	21	96	106. Diarrhœa and Enteritis (2 years and over) (3)	...	...	18	2	...	2	...	2	1	3	1	...	1	3	3	4	6	6	16	6	22	...
1	...	...	...	...	...	...	...	1	...	...	1	1	2	1	2	3	107. Intestinal Parasites (3)	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	4	1	3	5	7	4	4	6	3	8	6	31	23	43	11	54	108. Hernias; Intestinal Obstructions	11	1	...	3	...	2	...	4	...	...	1	1	2	2	3	3	2	1	11	3	4	...
2	...	3	1	1	2	...	...	1	1	3	...	6	8	9	5	14	109. Other Affections of the Intestines (3)	5	...	...	...	...	...	...	1	...	...	...	1	...	2	1	1	1	1	...	...	1	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	110. Icterus Gravis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	111. Tumors, Hydatid, of the Liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	3	2	2	5	5	5	7	8	...	7	5	37	14	46	5	51	112. Cirrhosis of the Liver (12)	...	...	...	...	...	...	1	1	...	1	1	3	4	3	2	7	4	10	8	2	4	...
1	2	...	...	2	1	1	...	...	1	2	4	3	11	13	1	14	113. Biliary Calculi (13)	...	...	...	...	...	2	...	1	...	...	...	...	...	2	...	4	2	2	...	1	...	...
2	4	2	3	1	1	2	1	2	1	5	2	13	13	16	10	26	114. Other Affections of the Liver (13)	1	2	...	1	...	1	...	...	1	1	1	2	1	2	1	3	1	2	2	3	1	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	115. Affections of the Spleen	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	4	1	7	3	2	2	...	1	...	2	10	15	16	9	25	116. Peritonitis, Simple (Puerperal excepted) (3)	1	1	1	1	...	1	2	1	1	1	2	1	2	2	2	1	...	2	3	...	...	...
...	...	...	...	...	...	1	...	...	...	1	...	1	1	2	...	2	117. Other Affections of the Digestive Apparatus (Cancer and Tubercle excepted) (3)	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
2	4	2	...	1	4	1	3	3	3	4	1	16	12	24	4	28	118. Appendicitis and Abscess of the Iliac Fossa (3)	...	...	...	...	...	8	5	4	1	3	1	1	2	1	...	...	...	2	...	...	...	...
9	5	7	12	4	4	3	10	9	8	4	11	45	41	54	32	86	119. Nephritis, Acute (5)	6	5	3	3	1	3	6	4	2	8	2	4	4	6	3	5	5	3	2	6	5	...
40	48	49	56	45	45	47	48	30	48	36	66	301	257	383	175	558	120. Bright's Disease	...	...	1	...	1	1	5	5	11	12	17	24	19	35	41	54	74	77	79	54	47	1
3	...	...	1	1	...	...	...	...	...	1	1	2	5	6	1	7	121. Other Diseases of the Kidneys and their Adnexa (4)	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	1	...	2	...	...
...	...	...	1	...	...	1	1	...	...	1	...	4	...	3	1	4	122. Calculi of the Urinary Tract (4)	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...
1	1	1	5	4	3	2	1	3	2	3	2	22	6	21	7	28	123. Diseases of the Bladder (4)	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	3	5	4	4	10	...
...	...	...	...	...	1	1	1	1	1	...	...	4	1	4	1	5	124. Diseases of the Urethra, Urinart Abscess, etc. (4)	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	2	...	...	...	...
2	2	2	1	3	1	2	1	1	3	...	2	20	...	19	1	20	125. Diseases of the Prostate	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1	2	7	5	3	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	126. Nonvenereal Diseases of the Male Genital Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	1	127. Metritis (12)	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	1	128. Hemorrhage, Uterine (nonpuerperal)	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
...	...	1	...	1	...	...	1	...	...	1	...	...	4	1	3	4	129. Tumor, Uterine (nonpuerperal)	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...	...	...
1	...	...	...	...	...	...	...	1	...	...	1	...	3	3	...	3	130. Other Diseases of the Uteras (12)	...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...
2	...	...	1	...	...	...	...	1	1	1	...	...	6	4	2	6	131. Cysts and other Diseases of the Ovary (4)	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1	1	1	1	...	...
1	...	...	2	...	...	...	1	1	...	3	...	...	8	5	3	8	132. Other Diseases of the Female Genital Organs (12)	...	...	...	...	...	...	...	...	3	3	1	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	133. Nonpuerperal Diseases of the Breast (Cancer excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	3	3	...	1	3	1	...	...	...	...	...	...	12	9	3	12	134. Accidents of Pregnancy	...	...	...	...	...	...	...	...	4	2	5	1	...	...	...	...	...	...	...	...	...	...
...	1	1	...	...	1	...	1	1	1	1	...	...	7	5	2	7	135. Hemorrhage, Puerperal	...	...	...	...	...	...	...	...	...	...	2	5	...	...	...	...	...	...	...	...	...	...
1	5	1	1	...	...	...	...	...	2	...	...	1	9	7	3	10	136. Other Accidents of Labor	1	...	...	...	...	...	...	1	...	2	1	4	1	...	...	...	...	...	...	...	...	...
3	2	3	5	3	5	2	2	2	5	2	1	...	35	21	14	35	137. Septicæmia, Puerperal (12)	...	...	...	...	...	...	...	2	11	6	10	4	1	1	...	...	...	...	...	...	...	...
...	...	1	2	...	6	2	3	1	2	1	1	...	19	15	4	19	138. Albuminuria and Puerperal Eclampsia	...	...	...	...	...	...	1	3	6	4	3	2	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	1	...	1	...	...	3	3	...	3	139. Phlegmasia, Alba Dolens, Puerperal (12)	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...
1	1	...	2	...	4	1	3	1	2	...	1	2	14	7	9	16	140. Other Puerperal Accidents, Sudden Death	1	...	...	...	...	...	...	1	4	3	5	1	1	...	...	...	...	...	...	...	...	...
1	...	2	1	2	6	4	1	2	1	2	1	13	10	16	7	23	142. Gangrene (8)	1	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	2	1	5	2	8	...

TABLE A—*Concluded.*

DEATHS IN MARYLAND, 1909, BY AGE, SEX, COLOR, MONTH AND CAUSE—RURAL DISTRICTS.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Male.	Female.	White.	Colored.	Total.	Causes of Death.	0 to 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and Over.	Unknown.
..	...	...	...	1	...	3	...	1	...	...	...	2	3	4	1	5	143. Furuncle (Carbuncle) (8)	3	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...
2	1	1	3	...	...	...	...	...	...	1	2	6	4	6	4	10	144. Abscess; Warm (8)	1	1	1	...	...	1	...	...	1	...	...	...	...	...	...	1	...	2	...	1	...	1
..	1	...	1	2	2	...	2	2	...	2	...	5	7	10	2	12	145*d*. Other Diseases of the Skin and its Adnexa (8)	7	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...
1	...	3	...	1	2	1	...	...	2	2	2	11	3	8	6	14	146. Affections of the Bones (nontuberculosis) (14)	1	1	1	1	...	3	1	...	...	...	...	...	1	...	...	1	1	...	2	...	1	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	147. Arthritis and other Affections of the Joints (Tubercle and Rheumatism excepted)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	148. Amputation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...	1	149. Other Affections of the Organs of Locomotion	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
14	9	9	7	4	5	7	4	4	3	6	4	44	32	63	13	76	150. Malformations, Congenital	68	4	2	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
33	32	29	32	23	35	52	54	35	40	34	32	235	196	316	115	431	151. Congenital Icterus, Debility and Sclerema	426	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
2	4	...	4	1	...	2	3	4	1	3	3	18	9	16	11	27	152. Other Diseases of Early Infancy	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	1	...	...	1	...	...	1	1	...	1	3	3	1	4	153. Lack of Care	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
43	32	43	44	26	21	22	41	38	25	21	35	185	206	297	94	391	154. Senile Debility	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	10	17	56	68	227	9
..	...	4	...	1	1	2	3	...	2	...	1	11	3	12	2	14	155. Suicide by Poison	...	...	...	...	...	...	...	1	4	1	...	2	...	1	2	...	1	...	1	1	...	...
1	...	...	...	...	...	...	...	...	...	...	1	2	...	2	...	2	156. Suicide by Asphyxia	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...
..	1	1	2	2	...	1	7	1	1	...	2	15	3	16	2	18	157. Suicide by Hanging or Strangulation	1	1	...	...	...	...	...	2	...	1	...	1	2	...	3	1	1	1	...	3	1	...
1	1	1	1	...	...	1	...	1	1	...	...	3	3	6	...	6	158. Suicide by Submersion	...	...	...	...	...	...	...	...	...	...	...	1	1	...	3	1	...	...	...	...	...	...
1	1	4	2	1	3	3	1	1	3	5	3	26	2	28	...	28	159. Suicide by Firearms	...	...	...	...	...	...	...	1	3	3	2	4	1	4	4	2	2	...	...	...	2	...
..	...	...	...	1	1	1	...	...	...	...	...	3	...	3	...	3	160. Suicide by Cutting Instruments	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	161. Suicide by Jumping from High Places	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	1	162. Suicide by Crushing	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
..	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	1	163. Other Suicides	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
2	3	2	5	2	7	8	5	6	5	5	4	35	19	47	7	54	164. Fractures	1	...	...	...	...	1	2	5	4	5	1	2	...	2	7	4	6	1	2	4	7	...
..	...	3	...	1	...	...	...	...	1	...	...	3	2	5	...	5	165. Luxations	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	2	...
12	12	11	8	14	9	20	16	13	20	15	16	144	22	138	28	166	166. Other Accidental Traumatisms	3	1	2	...	4	4	14	10	14	13	9	13	12	13	10	7	11	3	3	6	9	5
8	6	8	3	6	2	3	6	1	4	7	10	24	40	41	23	64	167. Burns and Scalds	6	6	6	5	8	7	2	2	1	2	...	2	1	1	2	4	3	1	1	1	2	1
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	168. Burning by Corrosive Substances	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	1	8	3	2	1	...	...	...	10	5	11	4	15	169. Insolation	3	...	...	...	...	...	...	1	...	...	...	2	1	...	...	...	1	1	2	2	2	...
1	3	2	...	...	...	...	...	...	1	1	3	11	...	4	1	5	170. Freezing	...	...	...	...	...	...	1	...	...	3	...	...	1	1	...	2	...	3	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	171. Electrical Disturbances	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	1	...	...	...	...	...	...
7	3	4	11	6	12	19	19	4	5	3	5	89	9	63	35	98	172. Accidental Submersion	...	...	1	...	2	9	6	8	17	9	8	6	9	5	6	1	...	1	1	...	1	8
1	...	...	...	...	...	1	...	...	...	...	...	1	1	...	2	2	173*a*. Inanition	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
..	1	...	1	...	...	...	1	...	...	1	2	4	2	5	1	6	174. Absorption of Deleterious Gases (Suicide excepted)	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	1	2	1
1	2	3	2	2	2	1	4	2	3	2	2	19	7	19	7	26	175. Other Acute Poisonings	6	3	3	1	2	...	...	...	3	1	2	...	1	2	...	1	...	...	...	1	...	...
8	4	8	2	9	8	6	8	3	6	3	9	45	29	43	31	74	176. Other External Violence	37	...	...	1	...	1	2	2	9	9	4	...	...	4	4	...	1	...	...	...	...	...
1	3	6	5	2	5	3	...	...	6	2	3	19	17	15	21	36	177. Dropsy	3	1	...	...	1	...	...	...	...	...	...	...	2	2	4	...	1	5	8	5	4	...
4	4	4	3	3	2	6	4	3	3	4	4	27	17	32	12	44	178. Sudden Death	4	...	...	...	...	...	1	2	...	1	1	2	3	5	3	3	8	4	3	2	1	1
26	22	21	19	24	29	54	38	36	32	22	24	183	164	176	171	347	179. Unspecified or Ill-Defined Causes of Death	229	27	8	3	3	4	3	1	1	2	2	3	1	3	9	7	8	8	7	6	5	7
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....	180. Still Births	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

(1)—In one instance sex not stated.
(2)—In one instance color not stated.
(3)—In one instance color not stated.
(4)—In five instances color not stated.
(5)—In one instance color not stated.
(6)—In two instances color not stated.

(7)—In one instance sex not stated.
(8)—In one instance color not stated.
(9)—In one instance color not stated.
(10)—In one instance color not stated.
(11)—In one instance sex not stated.
(12)—In one instance color not stated.

(13)—In two instances color not stated.
(14)—In one instance sex not stated.
(15)—In one instance color not stated.
(16)—In one instance color not stated.
(17)—In one instance color not stated.
(18)—In one instance color not stated.

(19)—In one instance color not stated.
(20)—In one instance color not stated.
(21)—Total of color not stated, —.
(22)—Total of sex not stated, —.

TABLE B.

DEATHS IN MARYLAND, 1909, BY CAUSES, SEX, COLOR, SEASON AND COUNTY.

	Baltimore Excluded.								Counties.																						
Balto. City.	Male.	Female.	White.	Colored.	Total.	Per Cent.	Causes of Death.	Total, Including Baltimore.	Allegany.	Anne Arundel.	Baltimore.	Calvert.	Caroline.	Carroll.	Cecil.	Charles.	Dorchester.	Frederick.	Garrett.	Harford.	Howard.	Kent.	Montgomery.	Prince George's	Queen Anne's.	Somerset.	St. Mary's.	Talbot.	Washington.	Wicomico.	Worcester.
136	149	155	214	90	304	2.18	1. Typhoid Fever (1)	440	24	12	36	5	15	10	4	6	28	20	1	2	7	6	8	13	8	21	3	11	26	18	10
....	....	....	....	....	....	.....	2. Typhus	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	....	....	....	....	....	.....	3. Fever, recurrent	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	12	10	13	9	22	.15	4. Fever, Intermittent, and Malarial Cachexia (2)	32	...	1	2	...	...	...	...	1	...	...	...	...	...	1	...	4	2	3	3	1	...	1	3
....	....	....	....	....	....	.....	5. Variola	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
54	38	36	53	21	74	.63	6. Measles (1)	128	...	6	25	...	6	...	5	2	2	3	...	2	...	1	3	5	...	...	1	...	13	...	...
25	16	9	23	2	25	.23	7. Scarlatina (1)	50	4	...	3	...	1	2	1	...	...	1	1	...	...	1	3	4	...	...	...	1	1	1	1
117	60	63	63	60	123	1.19	8. Whooping Cough (1)	240	9	16	20	5	5	3	4	2	...	9	2	2	3	10	2	9	4	4	1	5	7	1	...
76	42	41	69	14	83	.78	9. Diphtheria and Croup (1)	109	9	3	14	1	...	1	1	7	6	8	3	4	1	2	1	4	2	6	...	4	2	3	1
79	97	89	133	53	186	1.31	10. Grippe (1)	265	8	10	34	3	6	20	10	7	7	7	3	6	6	8	10	5	3	5	1	11	7	5	4
....	....	1	1	....	1	.....	11. Miliary Fever (2)	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	....	....	....	....	....	.....	12. Cholera, Asiatic	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	2	2	4	....	4	.04	13. Cholera, nostras (3)	9	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
33	32	29	46	15	61	.46	14. Dysentery (2)	94	7	3	9	...	2	2	3	1	5	3	2	1	3	3	...	3	1	1	...	1	3	5	3
....	....	....	....	....	....	.....	15. Pest (Plague)	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	....	....	....	....	....	.....	16. Yellow Fever	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	....	....	....	....	....	.....	17. Leprosy	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	8	14	22	....	22	.21	18 Erysipelas (2)	44	2	1	7	...	1	1	...	1	4	1	...	2	...	...	...	1	...	...	1	...	...	...	...
....	1	2	3	....	3	.01	19. Other Epidemic Affections (2)	3	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37	9	6	13	2	15	.25	20. Purulent Infection and Septicæmia (3)	52	1	1	1	...	...	...	1	...	1	2	...	1	...	...	1	...	1	...	...	...	4	...	1
....	....	....	....	....	....	.....	21. Glanders and Farcy	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	....	1	1	....	1	.....	22. Malignant Pustule and Charbon (Anthrax) (1)	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
1	....	....	....	....	....	.....	23. Rabies (2)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	....	....	....	....	....	.....	24. Actinomycosis, Trichinosis, etc. (1)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	....	1	1	....	1	.01	25. Pellagra (3)	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	8	4	8	4	12	.15	26. Tubercle of Larynx (2)	32	...	1	4	1	1	...	1	1	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...
1583	490	587	635	442	1077	11.57	27. Tubercle of Lungs (2)	2330	43	63	189	31	42	32	32	39	61	54	10	45	29	32	52	54	32	44	15	36	56	52	34
65	20	15	21	14	35	.49	28. Tubercle of Meninges (2)	100	1	7	9	2	1	2	...	...	...	2	...	...	1	2	1	1	...	2	...	2	1	1	...
38	18	22	20	20	40	.38	29. Tubercle, Abdominal (2)	78	...	3	5	...	...	...	...	1	3	3	...	...	...	7	6	3	1	1	1	1	...	3	2
13	4	3	6	1	7	.09	30. Pott's Disease (2)	20	2	...	...	...	...	1	...	...	...	...	1	...	...	...	...	2	1	...	...	...	...	...	...
1	....	....	....	....	....	.....	31. Abscess, Cold (2)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	1	....	1	....	1	.03	32. White Tumors (White Swellings) (2)	7	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	8	5	8	5	13	.11	33. Tubercle of other Organs (2)	24	...	...	4	...	...	1	1	...	1	1	...	1	...	1	...	...	...	...	...	1	1	1	...
31	6	3	6	3	9	.19	34. Generalized Tubercle (2)	40	1	1	3	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
2	3	....	1	2	3	.02	35. Scrofula (2)	5	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
49	17	14	11	20	31	.39	36. Syphilis (2)	80	2	4	7	...	...	3	...	2	1	2	...	...	...	2	2	...	...	...	...	2	2	2	...
3	2	2	4	....	4	.03	37. Blennorrhagia of the Adult (2)	7	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...
1	1	1	....	2	2	.01	38. Gonococcic Infections of Children (2)	3	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	8	3	10	1	11	.19	39. Cancer and other Malignant Tumors of the Buccal Cavity (7)	40	1	...	1	...	...	...	2	...	...	1	...	...	...	2	1	1	...	...	...	...	1	1	...
172	70	62	114	18	132	1.45	40. Cancer and other Malignant Tumors of the Stomach and Liver (7)	304	18	8	31	1	1	8	3	1	3	7	4	4	4	1	3	7	3	8	1	3	7	3	3
44	12	19	29	2	31	.37	41. Cancer and other Malignant Tumors of the Peritoneum, Intestines and Rectum (7)	75	5	2	6	...	1	1	1	...	...	4	...	2	...	3	...	...	...	1	...	1	3	1	...
85	....	64	49	15	64	.73	42. Cancer and other Malignant Tumors of the Female Genitals (7)	149	4	4	9	...	4	3	2	2	1	3	2	1	1	2	4	4	1	3	...	2	4	7	2
42	1	52	49	4	53	.47	43. Cancer and other Malignant Tumors of the Breast (7)	95	3	2	12	1	1	5	3	1	...	9	...	2	1	2	3	...	...	...	1	2	3	1	1
14	16	11	27	....	27	.20	44. Cancer and other Malignant Tumors of the Skin (7)	41	2	2	3	1	...	2	1	2	2	3	...	2	1	1	...	1	...	1	...	1	2	...	...
64	19	19	32	6	38	.50	45. Cancer and other Malignant Tumors of other Organs (7)	102	6	1	5	...	...	2	2	2	1	5	...	3	...	3	...	1	2	1	...	4	...	...	...

TABLE B—*Continued.*

DEATHS IN MARYLAND, 1909, BY CAUSES, SEX, COLOR, SEASON AND COUNTY.

Baltimore Excluded.							Causes of Death.	Total, Including Baltimore.	Counties.																						
Balto. City.	Male.	Female.	White.	Colored.	Total.	Per Cent.			Allegany.	Anne Arundel.	Baltimore.	Calvert.	Caroline.	Carroll.	Cecil.	Charles.	Dorchester.	Frederick.	Garrett.	Harford.	Howard.	Kent.	Montgomery.	Prince George's.	Queen Anne's.	Somerset.	St. Mary's.	Talbot.	Washington.	Wicomico.	Worcester.
6	1	5	4	2	6	.05	46. Other Tumors (Tumors of the Female Genitals excepted) (7)	12	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	2	...	...
59	21	20	29	12	41	.49	47. Rheumatism, Acute, Articular (5)	100	5	1	8	1	2	1	...	2	1	2	2	2	...	1	1	4	2	...	...	...	2	1	3
20	8	5	11	2	13	.16	48. Rheumatism, Chronic, and Gout (4)	33	..	1	2	...	2	...	...	...	2	1	...	1	1	1	...	...	1	...	...	...	1	...	...
2	1	....	....	1	1	.01	49. Scorbutus (6)	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
67	20	36	52	4	56	.59	50. Diabetes (4)	123	4	3	12	...	...	5	4	...	3	5	1	3	2	1	...	2	1	...	1	...	4	2	3
7	....	2	2	....	2	.04	51. Goiter, Exophthalmic (4)	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
2	....	1	1	....	1	.01	52. Addison's Disease (2)	3	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	3	5	7	1	8	.08	53. Leukemia (4)	17	...	1	1	...	...	...	...	1	...	3	...	...	...	...	...	...	...	1	...	...	1	...	...
20	7	8	13	2	15	.17	54. Anæmia, Chlorosis (4)	35	3	1	3	...	...	3	2	...	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...
....	5	2	6	1	7	.03	55. Other General Diseases (4)	7	...	...	...	...	1	...	1	...	...	1	...	...	...	...	4	...	...	...	...	...	...	...	...
40	43	1	39	5	44	.41	56. Alcoholism (6)	84	9	6	8	1	...	3	...	2	...	6	2	1	1	...	...	...	1	...	...	2	1	1	...
....	....	....	....	....	....	.....	57. Saturnism	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	....	....	....	....	....	.....	58. Other Professional Intoxications (6)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	3	4	6	1	7	.03	59. Other Chronic Poisonings (10)	7	2	...	2	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
1	3	4	6	1	7	.03	60. Encephalitis (11)	8	...	...	...	...	...	1	...	2	...	...	...	1	...	...	...	...	...	...	...	...	1	2	...
88	63	41	78	26	104	.93	61. Meningitis (Simple (3)	192	14	8	19	...	2	5	6	4	2	6	1	3	2	5	6	5	3	5	1	2	4	1	2
17	2	1	1	2	3	.09	61*a*. Meningitis, Epidemic Cerebro-Spinal (1)	20	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1
18	12	2	12	2	14	.15	62. Locomotor Ataxia (8)	32	1	...	1	...	...	1	1	...	1	2	...	...	...	...	...	5	1	...	...	1	...	...	...
24	22	4	18	8	26	.24	63. Other Diseases of the Spinal Cord (8)	50	...	2	4	1	...	3	1	...	1	2	...	...	2	...	...	1	1	2	1	...	5	...	...
295	258	208	359	107	466	3.77	64. Cerebral Congestion and Hemorrhage (8)	761	33	24	68	12	9	36	26	15	16	44	4	21	15	12	16	27	6	62	3	20	28	8	11
21	12	9	20	1	21	.20	65. Cerebral Softening (8)	42	...	...	4	...	...	4	3	...	...	4	...	1	1	1	...	...	1	1	...	...	...	...	1
141	157	129	233	53	286	2.12	66. Paralysis without Specified Cause (8)	427	13	4	36	4	10	14	19	8	8	34	7	17	3	14	11	14	7	10	1	10	33	3	6
23	19	14	25	8	33	.27	67. Paralysis, General (8)	56	1	1	8	1	...	11	...	...	1	3	...	1	1	1	...	...	1	...	...	1	1	...	1
5	11	21	24	8	32	.18	68. Other Forms of Mental Alienation (8)	37	...	2	19	...	...	...	1	...	...	4	...	1	...	...	2	2	...	...	...	...	...	1	...
15	19	11	23	7	30	.22	69. Epilepsy (8)	45	3	1	11	...	...	2	1	...	1	3	...	...	1	...	...	...	...	...	...	4	1	2	...
1	6	3	8	1	9	.04	70. Eclampsia (nonpuerperal) (9)	10	1	...	3	...	...	...	...	2	...	1	...	...	...	...	...	...	...	1	1	...	...	...	...
96	58	52	63	47	110	1.02	71. Convulsions of Children (3)	206	3	16	17	2	2	7	5	3	3	13	3	3	2	2	4	5	2	4	2	2	7	3	...
19	18	11	21	8	29	.23	72. Tetanus (2)	48	6	3	3	...	...	...	1	4	3	1	...	1	...	...	1	1	...	1	1	...	1	2	...
3	1	....	1	....	1	.01	73. Chorea (3)	4	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42	11	18	23	6	29	.30	74. Other Diseases of the Nervous System (8)	71	1	1	6	...	...	4	1	1	...	1	...	1	1	...	1	2	1	1	...	3	3	1	...
....	....	....	....	....	....	.....	75. Diseases of the Eye and its Adnexa	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	2	1	3	....	3	.03	76. Diseases of the Ear (3)	12	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...
5	5	1	4	2	6	.03	77. Pericarditis (3)	11	...	...	1	...	1	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	1	...	...
95	8	12	17	3	20	.57	78. Endocarditis, Acute (3)	115	1	2	5	...	...	2	...	...	...	1	...	1	1	1	...	2	...	1	...	1	2	...	...
734	329	308	481	156	637	6.80	79. Organic Diseases of the Heart (8)	1371	35	29	110	9	14	41	44	19	27	54	3	33	13	17	25	34	20	11	4	15	57	10	13
42	12	8	17	3	20	.30	80. Angina Pectoris (8)	62	2	2	1	...	...	2	...	...	1	6	...	1	...	1	...	...	...	2	...	...	1	1	...
158	37	22	49	10	59	1.07	81. Affections of the Arteries (Atheroma, Aneurism, etc.) (8)	217	1	2	10	...	1	3	10	...	1	6	...	2	4	3	2	2	2	1	...	...	6	2	1
20	5	4	8	1	9	.14	82. Embolus and Thrombosis (8)	29	1	...	1	...	...	1	...	...	1	1	...	2	...	...	...	...	1	...	...	...	...	...	1
3	1	2	2	1	3	.02	83. Affections of the Veins (8)	6	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
4	....	....	....	....	....	.01	84. Affections of the Lymphatic System (8)	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	9	3	11	1	12	.10	85. Hemorrhages (11)	21	...	1	2	...	1	2	...	1	...	2	...	...	...	...	...	1	...	...	...	...	1	1	...
....	....	....	....	....	....	.....	86. Other Affections of the Circulatory System	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	1	5	....	6	6	.02	87. Diseases of the Nasal Fossæ (3)	6	...	...	1	...	...	...	...	2	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...
5	7	5	11	1	12	.08	88. Affections of the Larynx (3)	17	1	1	2	...	1	2	...	...	...	1	...	1	...	1	...	...	...	...	...	1	1	...	...
1	....	1	1	....	1	.....	89. Affections of the Thyroid Body (3)	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
61	56	59	71	44	115	.87	90. Bronchitis, Acute (3)	176	14	12	13	2	4	7	2	4	4	6	2	6	3	6	1	4	1	3	...	5	7	5	4
80	15	24	30	9	39	.59	91. Bronchitis, Chronic (3)	119	4	2	8	1	1	3	...	...	1	1	...	2	3	1	1	1	1	2	...	1	3	1	2
380	99	95	132	62	194	2.85	92. Broncho-Pneumonia (3)	574	15	18	40	5	2	13	6	6	13	12	2	9	6	3	8	5	3	...	1	4	19	2	2

TABLE B—*Continued.*

DEATHS IN MARYLAND, 1909, BY CAUSES, SEX, COLOR, SEASON AND COUNTY.

	Baltimore Excluded.								Counties.																						
Balto. City.	Male.	Female.	White.	Colored.	Total.	Per Cent.	Causes of Death.	Total, Including Baltimore.	Allegany.	Anne Arundel.	Baltimore.	Calvert.	Caroline.	Carroll.	Cecil.	Charles.	Dorchester.	Frederick.	Garrett.	Harford.	Howard.	Kent.	Montgomery.	Prince George's.	Queen Anne's.	Somerset.	St. Mary's.	Talbot.	Washington.	Wicomico.	Worcester.
735	305	243	398	150	548	6.37	93. Pneumonia (2)	1283	29	40	85	4	28	32	24	12	24	38	12	28	11	19	18	36	11	13	3	12	37	24	8
30	7	8	12	3	15	.22	94. Pleurisy (3)	45	1	1	2	...	...	2	1	...	1	3	...	...	...	...	1	...	...	...	...	1	2	...	...
39	20	23	36	7	43	.40	95. Pulmonary Congestion and Apoplexy (11)	82	2	4	7	1	...	7	4	1	...	4	...	3	1	...	...	1	...	...	...	2	5	...	1
6	....	....	....	....	....	.02	96. Gangrene of the Lung (3)	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	11	5	12	4	16	.21	97. Asthma (8)	43	4	1	2	1	1	...	...	...	...	1	1	...	...	...	...	...	1	...	...	1	1	1	1
5	1	1	1	1	2	.03	98. Pulmonary Emphysema (8)	7	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23	4	10	9	5	14	.18	99. Other Diseases of the Respiratory Apparatus (8)	37	...	1	4	...	...	...	...	1	...	1	...	...	...	1	1	2	...	...	...	...	2	...	1
4	5	5	3	7	10	.06	100. Affections of the Mouth and its Adnexa (3)	14	...	...	2	...	...	...	...	4	1	...	...	...	...	...	...	1	...	1	...	1	...	...	...
8	6	13	11	8	19	.13	101. Affections of the Pharynx (3)	27	...	1	2	1	...	...	2	...	2	...	2	...	1	1	1	1	...	2	...	1	1	...	1
2	1	....	1	....	1	.01	102. Affections of the Œsophagus (3)	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	9	3	11	1	12	.14	103. Ulcer of the Stomach (3)	31	...	1	3	...	2	...	2	1	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...
162	89	112	151	50	201	1.80	104. Other Affections of the Stomach (Cancer excepted) (3)	363	12	19	37	1	4	7	6	6	1	18	1	12	6	6	6	8	8	5	...	7	23	2	6
562	343	316	498	161	659	6.03	105. Diarrhœa and Enteritis (under 2 years) (3)	1221	55	82	122	12	19	26	16	17	43	50	5	14	12	16	16	36	26	16	5	14	43	22	12
....	1	3	4	....	4	.01	105*a*. Diarrhœa and Enteritis, Chronic (3)	4	...	...	...	...	1	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
119	48	48	75	21	96	1.06	106. Diarrhœa and Enteritis (2 years and over) (3)	215	12	5	11	1	3	10	4	1	8	5	...	5	...	...	2	...	1	2	...	2	6	10	8
....	1	2	1	2	3	.01	107. Intestinal Parasites (3)	3	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
105	31	23	43	11	54	.78	108. Hernias, Intestinal Obstructions (3)	159	3	2	10	...	...	2	3	1	2	7	...	3	1	...	1	5	...	2	...	5	6	1	...
16	6	8	9	5	14	.14	109. Other Affections of the Intestines (3)	30	...	1	2	1	...	2	...	...	1	1	...	...	...	...	...	3	...	1	...	1	1	...	...
1	....	....	....	....	....	.....	110. Icterus Gravis (3)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	....	....	....	....	....	.....	111. Tumors, Hydatid, of the Liver (3)	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
90	37	14	46	5	51	.70	112. Cirrhosis of the Liver (8)	141	4	5	12	1	...	2	2	...	1	4	...	3	1	1	3	4	3	...	...	...	3	2	...
19	3	11	13	1	14	.16	113. Biliary Calculi (3)	33	1	1	3	...	1	...	...	...	1	4	...	...	...	...	1	...	1	1	...	...	...	...	...
20	13	13	16	10	26	.23	114. Other Affections of the Liver (3)	46	...	4	3	1	...	1	1	...	1	1	...	1	...	1	2	2	1	1	...	...	2	3	1
....	....	....	....	....	....	.....	115. Affections of the Spleen	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	10	15	16	9	25	.16	116. Peritonitis, Simple (Puerperal excepted) (3)	34	...	1	3	1	...	3	...	...	1	3	1	...	1	...	1	3	3	1	1	...	1	...	1
1	1	1	2	....	2	.01	117. Other Affections of the Digestive Apparatus (Cancer and Tubercle excepted) (3)	3	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
61	16	12	24	4	28	.44	118. Appendicitis and Abscess of the Iliac Fossa (3)	89	4	...	4	...	...	...	...	...	6	2	...	...	...	...	1	...	1	...	...	2	2	4	2
85	45	41	54	32	86	.84	119. Nephritis, Acute (3)	171	2	11	19	1	3	3	2	1	2	9	...	...	...	...	...	...	...	...	...	...	...	...	...
844	301	257	383	175	558	6.96	120. Bright's Disease (8)	1402	39	49	91	5	18	31	22	13	36	42	4	20	10	26	27	23	12	18	3	21	24	10	14
18	2	5	6	1	7	.12	121. Other Diseases of the Kidneys and their Adnexa (3)	25	1	1	1	...	...	...	...	...	1	...	...	...	1	...	1	1	...	...	...	...	...	...	...
4	4	....	3	1	4	.03	122. Calculi of the Urinary Tract (3)	8	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...
16	22	6	21	7	28	.21	123. Diseases of the Bladder (3)	44	1	2	3	...	...	...	...	3	1	1	1	1	1	1	...	1	...	1	...	2	5	4	1
4	4	1	4	1	5	.04	124. Diseases of the Urethra, Urinary Abscess, etc. (3)	9	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
16	20	....	19	1	20	.17	125 Diseases of the Prostate	36	2	1	2	...	1	1	...	...	1	4	...	1	...	1	...	...	...	...	...	...	2	2	1
....	....	....	....	....	....	.....	126. Nonvenereal Diseases of the Male Genital Organs	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	....	1	....	1	1	.01	127. Metritis (3)	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	....	1	1	....	1	.....	128. Hemorrhage, Uterine (nonpuerperal) (11)	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	....	4	1	3	4	.07	129. Tumor, Uterine (noncancerous) (11)	15	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...
5	....	3	3	....	3	.03	130. Other Diseases of the Uterus (11)	8	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...
5	....	6	4	2	6	.05	131. Cysts and other Tumors of the Ovary (11)	11	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	2	...
18	....	8	5	3	8	.12	132. Other Diseases of the Female Genital Organs (11)	26	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	1	...	...	...	1	2	1
....	....	....	....	....	....	.....	133. Nonpuerperal Diseases of the Breast (Cancer excepted)	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	....	12	9	3	12	.10	134. Accidents of Pregnancy (9)	21	2	...	1	...	...	...	...	1	...	1	...	...	1	1	...	...	...	1	...	...	1	2	1
12	....	7	5	2	7	.09	135. Hemorrhage, Puerperal (9)	19	...	1	2	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	...	1	...	...	...
9	1	9	7	7	10	.09	136. Other Accidents of Labor (9)	19	1	1	...	...	...	1	...	...	1	1	...	1	...	1	...	1	...	...	...	...	1	1	...
37	....	35	21	14	35	.35	137. Septicæmia, Puerperal (9)	72	2	2	4	1	1	5	4	...	3	2	1	1	...	1	...	1	...	...	...	2	3	1	1
30	....	19	15	4	19	.24	138. Albuminuria and Puerperal Eclampsia (9)	49	...	2	5	1	2	1	...	1	1	1	1	...	...	...	...	1	...	...	...	1	...	1	1

TABLE B—*Concluded.*

DEATHS IN MARYLAND, 1909, BY CAUSES, SEX, COLOR, SEASON AND COUNTY.

Baltimore Excluded.							Causes of Death.		Counties.																						
Balto. City.	Male.	Female.	White.	Colored.	Total.	Per Cent.		Total, Including Baltimore.		Anne Arundel.	Baltimore.	Calvert.	Caroline.	Carroll.	Cecil.	Charles.	Dorchester.	Frederick.	Garrett.	Harford.	Howard.	Kent.	Montgomery.	Prince George's	Queen Anne's.	Somerset.	St. Mary's.	Talbot.	Washington.	Wicomico.	Worcester.
....	....	3	3	....	3	.01	139. Phlegmasia Alba Dolen, Puerperal (9)	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	2	14	7	9	16	.10	140. Other Puerperal Accidents, Sudden Death (9)	22	...	2	1	...	...	...	...	...	4	1	...	...	...	1	...	1	...	2	2	...	2	...	...
26	13	10	16	7	23	.24	142. Gangrene (3)	49	1	1	4	1	1	2	1	...	...	3	...	1	1	...	...	1	2	...	...	...	...	2	2
3	2	3	4	1	5	.03	143. Furuncle (Carbuncle (3)	8	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	2
15	6	4	6	4	10	.11	144. Abscess; Warm (3)	25	2	...	...	...	...	1	...	1	1	2	...	...	...	...	...	...	...	1	...	2	...	...	...
2	5	7	10	2	12	.06	145*d*. Other Diseases of the Skin and its Adnexa (2)	14	...	...	3	...	...	...	1	...	...	3	...	...	...	1	...	...	1	...	...	...	2	...	...
22	11	3	8	6	14	.17	146. Affections of the Bones (nontuberculous) (3)	36	2	...	1	...	...	1	1	...	1	...	...	2	...	1	...	1	...	...	...	3	1	...	...
....	....	....	....	....	....	.....	147. Arthritis and other Affections of the Joints (Tubercle and Rheumatism excepted)	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	....	....	....	....	....	.....	148. Amputation	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	1	....	1	....	1	.....	149. Other Affections of the Organs of Locomotion (3)	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
58	44	32	63	13	76	.66	150. Malformations, Congenital (5)	134	7	6	10	...	2	9	3	3	3	5	...	4	2	3	...	5	4	1	...	2	5	2	...
628	235	196	316	115	431	5.02	151. Congenital Icterus, Debility and Sclerema (5)	1059	29	33	79	9	18	19	12	11	16	27	5	10	14	11	18	23	9	13	1	13	44	11	6
26	18	9	16	11	27	.26	152. Other Diseases of Early Infancy (5)	53	4	3	6	1	...	1	3	1	3	1	...	...	2	...	1	...	...	...	...	...	1	...	...
106	1	3	3	1	4	.50	153. Lack of Care (11)	110	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
216	185	206	297	94	391	3.00	154. Senile Debility (8)	607	27	15	45	4	14	29	14	13	12	44	6	30	17	7	11	10	12	17	1	11	33	10	9
31	11	3	12	2	14	.22	155. Suicide by Poison (10)	45	2	...	6	...	1	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...
12	2	....	2	....	2	.06	156. Suicide by Asphyxia (10)	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
11	15	3	16	2	18	.14	157. Suicide by Hanging or Strangulation (10)	29	1	1	6	...	...	4	...	...	...	...	...	...	1	...	1	...	1	...	...	1	2	...	...
8	3	3	6	....	6	.16	158. Suicide by Submersion (10)	14	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	1
30	26	2	28	....	28	.28	159 Suicide by Firearms (10)	58	3	...	8	...	...	1	1	...	1	...	...	4	...	1	1	1	...	...	...	1	5	1	...
3	3	....	3	....	3	.02	160. Suicide by Cutting Instruments (10)	6	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
6	....	....	....	....	....	.02	161. Suicide by Jumping from High Places (10)	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	1	....	1	....	1	.....	162. Suicide by Crushing (10)	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
....	1	....	1	....	1	.....	163. Other Suicides (10)	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
38	35	19	47	7	54	.45	164. Fractures (10)	92	9	2	14	1	1	2	3	...	...	6	1	3	...	...	...	...	...	2	...	1	3	2	4
....	3	2	5	....	5	.02	165. Luxations (10)	5	2	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
185	144	22	138	28	166	1.74	166. Other Accidental Traumatisms (10)	351	26	8	29	1	1	9	11	2	7	15	4	9	5	3	3	11	5	2	...	1	10	2	2
76	24	40	41	23	64	.69	167. Burns and Scalds (10)	140	11	4	4	2	3	4	3	...	1	5	1	2	...	2	6	4	1	1	...	2	5	1	1
....	....	....	....	....	....	.....	168. Burning by Corrosive Substances	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	10	5	11	4	15	.22	169. Insolation (10)	45	...	2	5	...	...	...	2	...	...	1	...	...	...	...	2	1	...	1	1	...	...	...	...
....	11	....	7	4	11	.05	170. Freezing (10)	11	1	...	2	1	...	...	...	...	1	...	...	...	2	1	...	1	...	1	...	...	1	...	...
....	5	....	4	1	5	.02	171. Electrical Disturbances (10)	5	...	...	1	...	...	1	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	...
47	89	9	63	35	98	.42	172. Accidental Submersion (10)	145	1	18	22	9	...	1	2	...	4	1	...	3	2	4	1	3	9	...	1	8	5	1	3
2	1	1	....	2	2	.01	173*a*. Inanition (11)	4	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
12	4	2	5	1	6	.08	174. Absorption of Deleterious Gases (Suicide excepted) (10)	18	...	2	...	...	...	...	...	...	...	1	...	...	1	...	...	2	...	...	...	...	...	...	...
12	19	7	19	7	26	.18	175. Other Acute Poisonings (10)	38	2	2	3	...	2	3	...	1	1	2	...	...	...	...	...	...	...	...	...	...	4	4	2
54	45	29	43	31	74	.63	176. Other External Violence (10)	128	4	5	16	...	...	2	4	...	4	4	3	4	5	3	3	3	...	3	2	4	3	1	1
7	19	17	15	21	36	.21	177. Dropsy (8)	43	2	4	1	2	3	2	...	2	2	1	..	2	1	4	...	1	...	2	...	3	3	...	1
....	27	17	32	12	44	.21	178. Sudden Death (11)	44	3	4	9	...	2	1	...	1	1	3	..	1	1	...	...	7	1	3	1	...	1	3	1
326	183	164	176	171	347	3.34	179. Unspecified or Ill-Defined Causes of Death (11)	673	12	47	21	7	8	7	7	19	31	14	8	15	4	16	5	31	15	12	...	9	23	12	24
....	....	....	....	....	....	.....	180. Still Births	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

(1)—In one instance sex not stated.
(2)—In one instances color not stated.
(3)—In one instance color not stated.
(4)—In five instances color not stated.
(5)—In one instance color not stated.
(6)—In two instances color not stated.
(7)—In one instance sex not stated.
(8)—In one instance color not stated.
(9)—In one instance color not stated.
(10)—In one instance color not stated.
(11)—In one instance sex not stated.
(12)—In three instances color not stated.
(13)—In two instances color not stated.
(14)—In one instance sex not stated.
(15)—In one instance color not stated.
(16)—In one instance color not stated.
(17)—In one instance color not stated.
(18)—In one instance color not stated.
(19)—In one instance color not stated.
(20)—In one instance color not stated.
(21)—Total of color not stated, —.
(22)—Total of sex not stated, —.

TABLE C.

DEATHS IN MARYLAND, 1909, BY COUNTIES, MONTH, COLOR AND AGES.

COUNTIES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Male.	Female.	White.	Colored.	Total.	0 to 1.	1 to 2.	2 to 3.	2 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and Over.	Unknown.
Allegany	54	50	65	75	43	42	81	58	36	[illegible]	60	50	370	298	631	37	668	141	28	15	10	9	14	10	20	26	25	29	24	20	29	29	28	36	41	43	28	57	6
Anne Arundel	56	40	52	57	61	63	95	57	55	[illegible]	[illegible]	62	376	325	342	359	701	246	41	6	3	6	12	9	23	32	37	18	18	18	25	29	34	28	41	32	16	21	6
Baltimore	161	131	153	111	122	118	170	173	108	137	[illegible]	[illegible]	849	774	1394	229	1623	364	59	30	15	11	27	25	43	61	48	72	74	67	63	79	79	108	82	102	92	114	8
Calvert	13	20	14	17	14	11	19	11	9	13	7	13	91	70	68	93	161	38	4	3	3	2	6	5	8	7	12	5	4	4	7	3	3	5	12	14	5	9	2
Caroline	19	19	27	36	20	22	27	19	27	24	24	18	152	130	183	99	282	69	15	3	7	4	10	5	12	14	7	14	4	6	9	8	7	16	13	22	18	18	1
Carroll	45	45	62	52	30	37	37	59	40	41	33	36	258	259	476	41	517	98	14	9	3	2	6	5	7	21	9	18	11	17	14	30	20	23	41	55	49	62	3
Cecil	25	29	34	41	31	27	31	31	40	24	27	40	201	177	307	71	378	66	9	6	3	2	5	7	8	14	12	8	9	11	11	15	13	26	38	42	28	45	...
Charles	26	26	20	26	20	31	24	18	21	12	27	22	148	125	102	171	273	78	10	1	7	4	1	8	7	14	16	5	9	8	7	8	11	14	16	21	7	17	4
Dorchester	38	33	39	30	42	45	44	46	38	43	29	33	220	240	265	195	460	117	16	6	4	3	17	8	16	29	18	21	15	20	20	15	21	23	31	23	17	19	1
Frederick	52	59	75	54	50	61	57	77	49	52	63	58	380	327	570	137	707	120	25	10	6	5	12	14	15	21	18	20	30	16	30	33	35	46	44	68	55	83	1
Garrett	6	12	13	13	19	7	13	15	6	4	7	11	72	54	125	1	126	29	2	3	5	3	8	1	5	2	6	5	6	...	4	4	6	9	7	7	7	7	...
Harford	40	31	34	46	37	20	29	31	36	27	24	27	196	186	276	106	382	71	4	7	2	4	6	4	14	12	13	10	6	12	15	13	20	24	37	34	24	47	3
Howard	24	18	25	28	12	13	20	16	25	19	15	16	143	88	169	62	231	56	7	5	2	....	2	8	5	5	11	8	8	6	4	6	11	20	14	19	13	19	2
Kent	26	17	35	27	25	23	24	33	20	21	22	25	152	146	151	147	298	58	14	11	5	4	8	4	6	14	6	9	10	10	10	22	12	25	23	17	12	18	...
Montgomery	30	21	29	40	24	31	32	32	22	19	24	22	157	169	199	127	326	65	12	5	3	1	12	6	15	17	16	10	9	10	11	11	12	18	17	21	22	30	3
Prince George's	35	48	38	48	34	40	63	37	37	32	34	40	261	225	266	220	486	131	18	15	10	3	21	9	15	10	14	19	10	16	22	18	25	23	21	19	31	21	5
Queen Anne's	23	18	14	22	25	22	31	25	15	22	16	21	128	126	129	125	254	60	13	3	....	1	8	5	11	13	8	5	12	5	10	7	10	12	22	19	10	16	4
Somerset	19	32	28	13	14	14	34	23	22	23	32	38	148	144	170	122	293	59	11	5	4	1	8	10	17	17	9	11	7	7	9	9	14	15	13	24	20	21	1
St. Mary's	4	5	7	5	9	12	4	7	1	6	4	1	34	31	45	20	65	6	2	5	1	....	....	4	1	5	3	4	4	...	6	4	1	3	9	4	2	1	...
Talbot	28	26	31	26	18	30	29	23	22	14	21	40	157	151	140	168	308	52	13	3	5	2	9	7	11	23	14	9	13	3	10	9	13	11	28	34	15	21	3
Washington	58	65	64	62	48	47	56	76	41	55	39	65	347	329	624	52	676	153	32	18	5	6	11	10	19	21	30	27	19	9	19	21	34	29	50	47	52	61	3
Wicomico	29	14	30	24	15	41	31	41	28	22	14	18	144	163	220	87	307	65	11	7	6	1	7	11	17	22	10	10	13	13	16	12	9	15	15	17	7	19	4
Worcester	20	13	21	18	10	30	34	26	14	18	11	26	123	118	136	105	241	48	10	5	2	2	8	6	11	14	7	8	5	5	7	9	8	7	20	12	13	32	2
Total 23 Counties	829	772	910	871	723	787	985	934	712	736	701	802	5107	4655	6988	2774	9762	2190	370	181	111	76	218	181	306	414	349	345	320	283	358	394	426	536	635	706	543	758	62
Total Baltimore City	875	757	984	986	829	759	988	910	808	835	772	873	5394	4982	7791	2585	10376	2227	474		370		225	143	247	915		933		1067		1108		1192		982		492	1
Total Maryland	1704	1529	1894	1857	1552	1546	1973	1844	1520	1571	1473	1675	10501	9637	14779	5359	20138	4417	844		738*		443	324	552	1678		1598		1708		1928		2363		2231		1250	63

*—Ages 2 to 5.

TABLE D.

BIRTHS IN MARYLAND IN 1907 BY MONTHS, SEX, COLOR, NATIVITY AND AGE OF PARENTS—RURAL DISTRICTS.

COUNTIES.	MONTH OF BIRTH.																							AGE OF FATHER.									AGE OF MOTHER.								
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Male.	Female.	White.	Colored.	Total.	Both Maryland.	One Maryland.	Neither Maryland.	Both Foreign.	Father Foreign.	Mother Foreign.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 and Over.	Unknown.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 and Over.	Unknown.	
Allegany*	113	84	106	101	94	85	101	115	103	10	110	89	643	559	1149	53	1202	561	319	209	53	38	22	12	212	297	251	224	112	45	22	27	112	324	309	232	147	52	3	22	1 a
Anne Arundel	53	49	29	47	36	47	62	57	38	5	37	47	305	250	424	131	555	341	52	36	87	25	14	3	98	133	122	86	58	23	16	16	51	160	156	86	58	21	2	21	...
Baltimore	116	119	99	109	114	101	110	104	110	1	113	106	704	622	1206	120	1326	829	201	96	92	62	46	4	198	326	266	239	155	70	35	33	91	306	342	276	189	80	7	35	...
Calvert	19	17	21	26	16	20	22	29	15	[illegible]	14	21	123	119	124	118	242	220	15	[illegible]	1	...	...	1	43	50	43	47	26	18	5	9	37	52	61	40	29	12	...	11	...
Caroline	14	19	24	18	16	12	34	11	16	1	10	14	100	105	171	34	205	129	45	19	3	7	2	2	36	47	36	35	21	8	6	14	22	51	45	41	25	4	2	15	...
Carroll	32	33	50	28	29	42	30	36	52	3	50	30	251	200	422	29	451	380	55	9	1	3	3	6	82	126	93	74	41	11	14	4	40	116	123	73	68	24	1	6	...
Cecil	34	26	43	28	25	25	39	28	26	2	17	26	170	171	308	33	341	199	106	28	5	1	2	4	46	64	62	65	37	14	10	39	36	85	66	61	42	20	...	31	...
Charles*	44	20	37	40	30	27	25	39	28	3	31	25	194	183	159	218	377	339	27	7	1	3	...	1	49	76	76	64	48	29	25	9	30	96	81	78	54	23	6	8	1 a
Dorchester* (1)	55	44	53	52	57	56	59	66	36	5	42	42	301	313	392	222	614	521	69	12	6	6	...	9	108	137	116	101	55	39	20	29	77	161	147	105	68	24	8	22	2 b
Frederick (2)	48	64	66	52	35	55	61	66	51	6	65	57	349	337	605	81	686	556	86	39	3	...	2	3	125	174	127	114	62	29	29	23	74	180	156	124	90	38	3	20	1 c
Garrett	7	13	21	14	24	15	19	18	8		5	3	65	90	154	1	155	85	44	21	...	3	2	1	22	38	36	20	20	5	4	9	11	41	43	26	14	9	1	10	...
Harford (1)	28	23	24	26	35	18	29	27	24	2	27	29	187	130	277	40	317	221	66	15	7	7	1	...	42	68	55	60	42	24	14	12	29	67	71	59	52	19	2	17	1 d
Howard	36	20	22	27	16	25	22	34	25	1	14	36	159	133	229	63	292	226	42	14	5	2	3	3	46	47	68	52	35	24	11	6	19	74	75	46	49	19	4	6	...
Kent	20	16	13	18	10	11	19	19	24	1	14	32	98	110	140	68	208	187	16	3	1	1	...	5	33	53	36	34	21	17	7	2	27	66	34	31	34	12	3	1	...
Montgomery*	55	29	60	38	42	49	43	40	38	3	55	25	263	250	372	141	513	330	95	75	6	3	4	7	66	131	102	86	50	28	25	18	48	128	147	79	67	27	2	13	2 a
Prince George's	61	57	78	46	58	92	73	57	65	6	56	59	409	355	509	255	764	460	141	131	13	7	12	10	108	180	133	147	80	39	40	27	67	200	179	132	92	45	8	41	...
Queen Anne's	26	20	19	16	21	8	14	9	28	1	33	22	109	121	154	76	230	192	23	10	1	2	2	2	39	57	42	44	20	14	7	5	29	60	62	36	34	7	1	1	...
Somerset	45	42	31	28	23	27	30	21	26	3	17	23	175	174	261	88	349	307	37	2	1	1	...	3	61	75	63	60	43	19	13	12	32	103	75	64	45	16	4	10	...
St. Mary's	....	4	....	2	2	5	5	4	3	1	5	1	25	16	37	4	41	36	2	2	1	...	...	...	....	10	8	14	5	2	2	...	1	9	10	12	6	3	...	...	...
Talbot	34	21	27	25	20	24	17	24	24	2	20	25	154	134	215	73	288	231	40	11	2	4	...	4	41	79	45	49	30	14	15	11	34	82	61	47	41	16	1	6	...
Washington	94	92	86	68	73	58	86	105	79	9	58	101	516	479	957	38	995	618	244	111	9	8	5	16	192	260	194	169	96	35	22	11	91	265	283	173	110	57	1	15	...
Wicomico	37	29	25	27	30	47	33	34	37	3	18	24	190	182	318	54	372	282	63	24	...	2	1	5	66	76	90	49	36	28	12	10	36	91	94	62	43	22	6	18	...
Worcester	22	28	31	16	27	27	25	26	33	2	23	29	171	145	194	122	316	235	44	26	5	4	2	5	66	66	57	35	41	16	11	19	47	79	69	44	40	15	1	21	...
Total 23 Counties	993	869	965	852	833	876	958	969	889	93	834	866	5661	5178	8777	2062	10839	7485	1832	907	303	189	123	106	1779	2570	2121	1868	1134	551	365	345	1041	2796	2689	1927	1397	565	66	350	8
Total Baltimore City	745	787	790	689	609	617	750	772	797	74	785	712	4514	4282	7313	1483	8796																								
Total Maryland	1738	1656	1755	1541	1442	1493	1708	1741	1686	167	619	1578	10175	9460	16090	3545	19635																								

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*—Mother 14 years old.
(1)—Mother 13 years old.
(2)—Mother 13½ years old.

a—Mother at 14 years.
b—Mother between 13 and 14 years.
c—Mother at 13½ years.
d—Mother at 13 years.

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